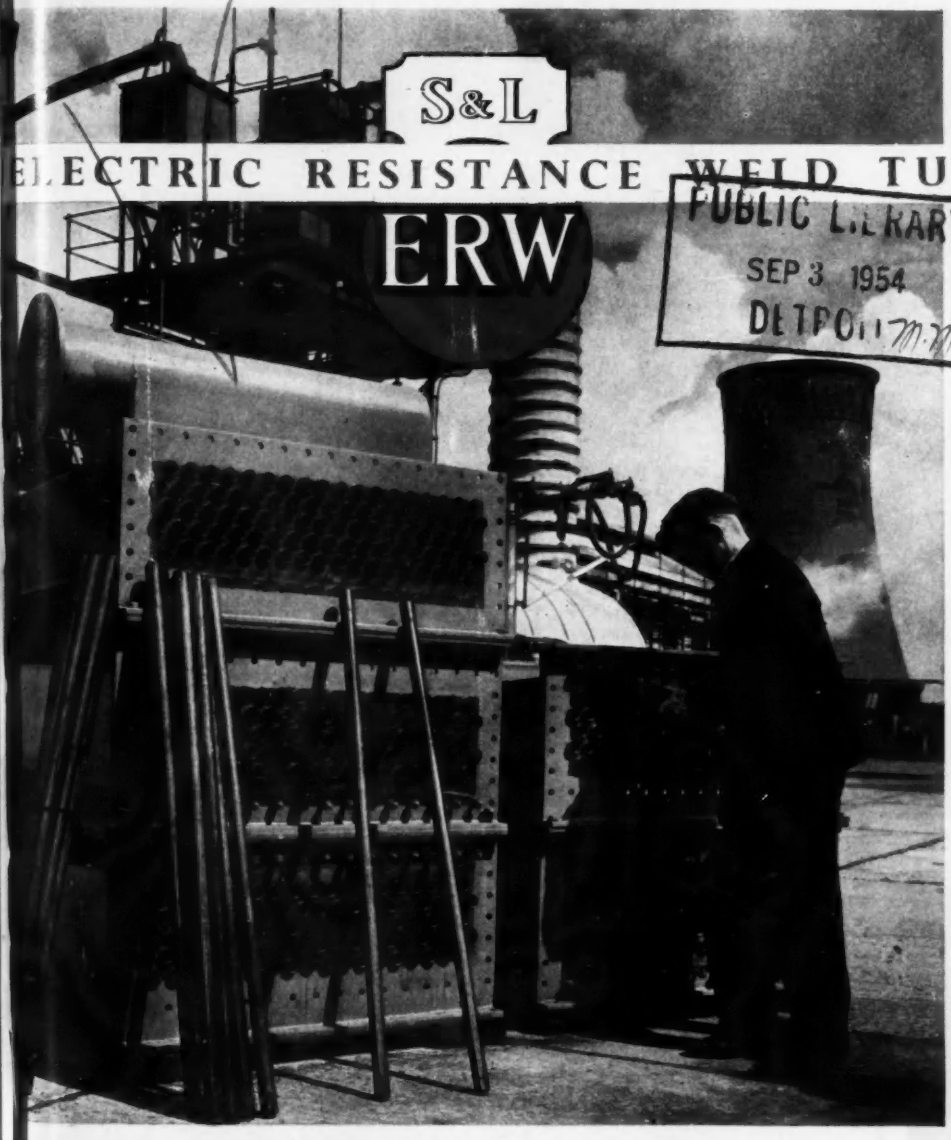
TECHNOLOGY DEPT.

Gas Journal

VOL. 279 106TH YEAR. LONDON, AUGUST 18, 1954 NO. 4759. PRICE 1/3

S&L

ELECTRIC RESISTANCE WELD TUBES



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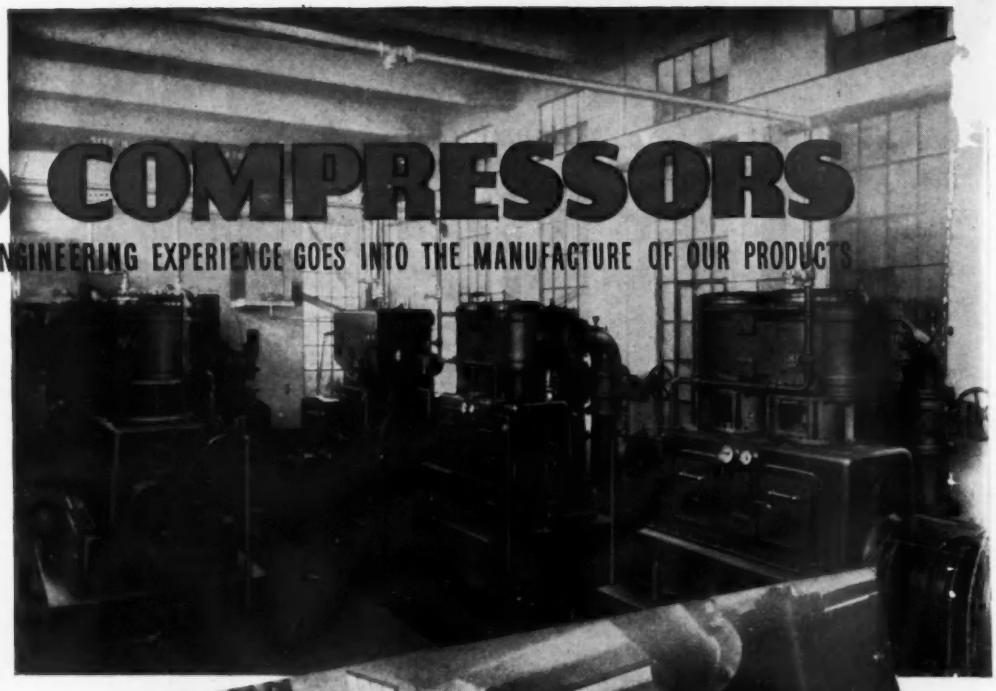

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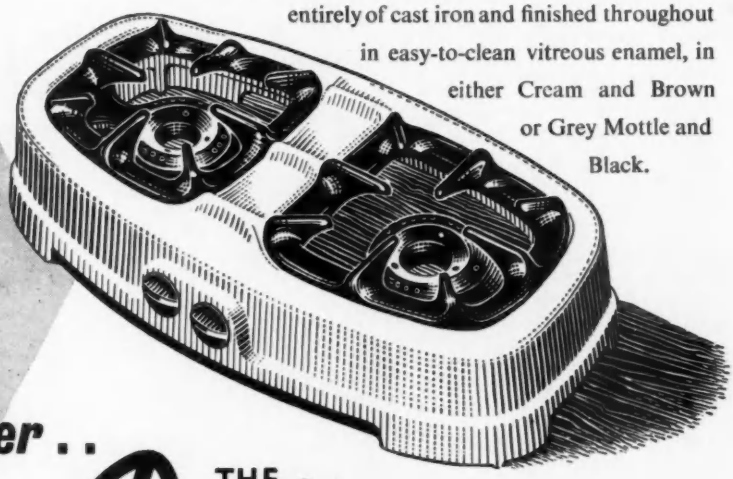

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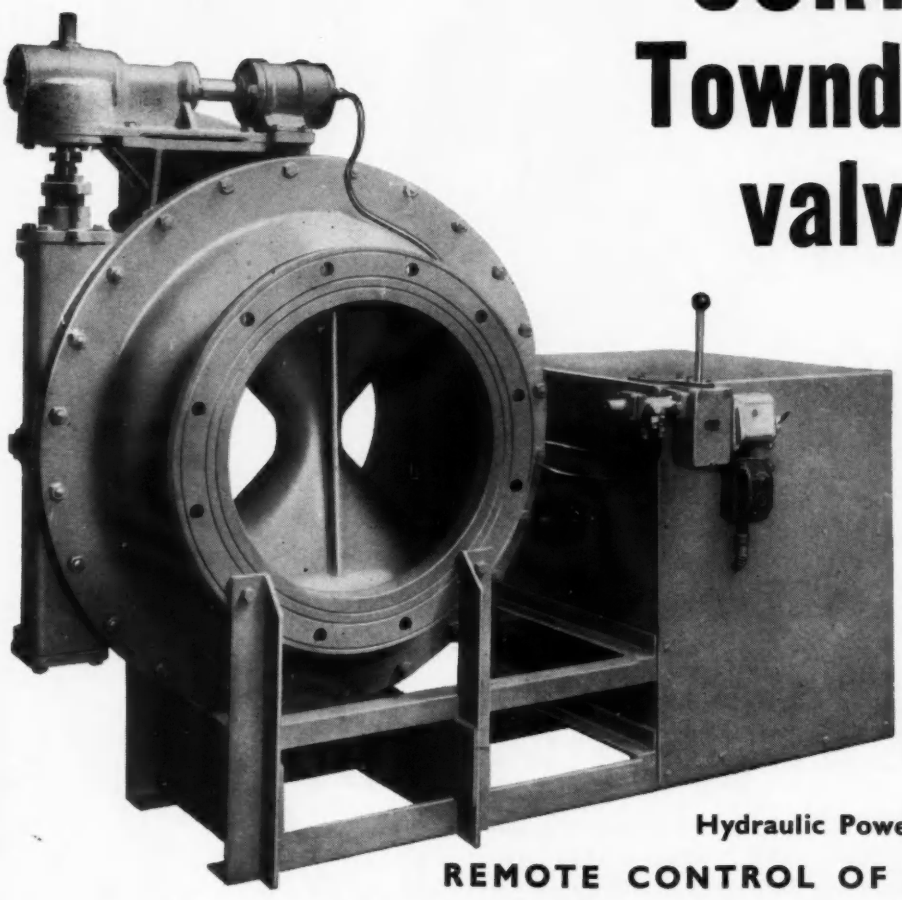

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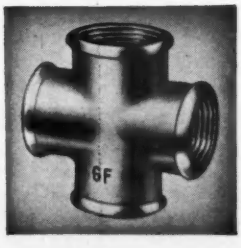

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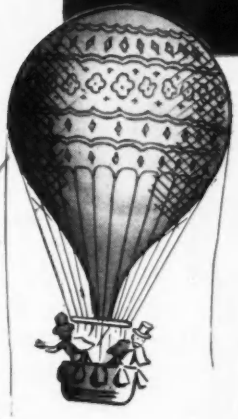

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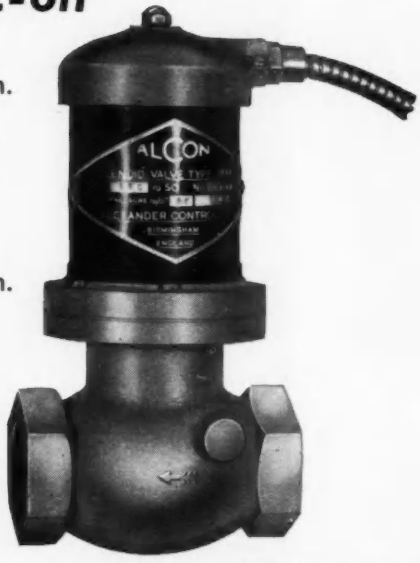

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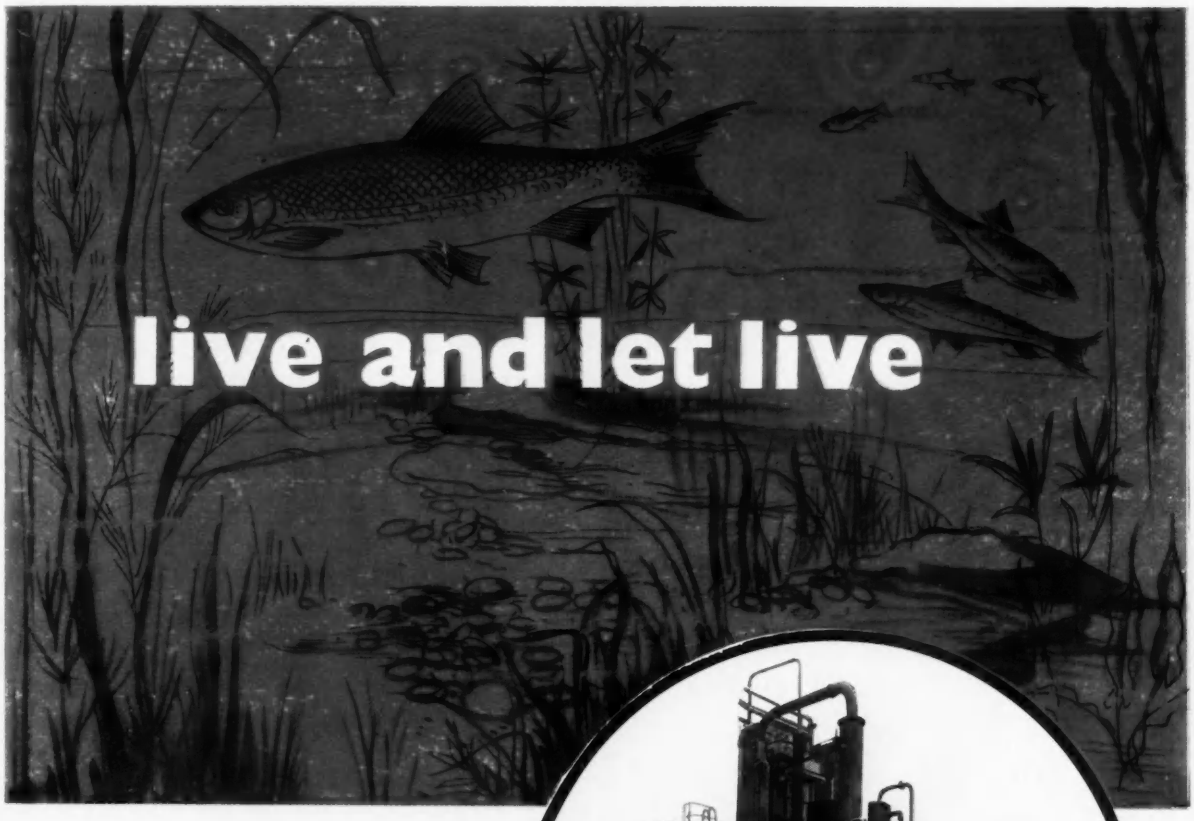

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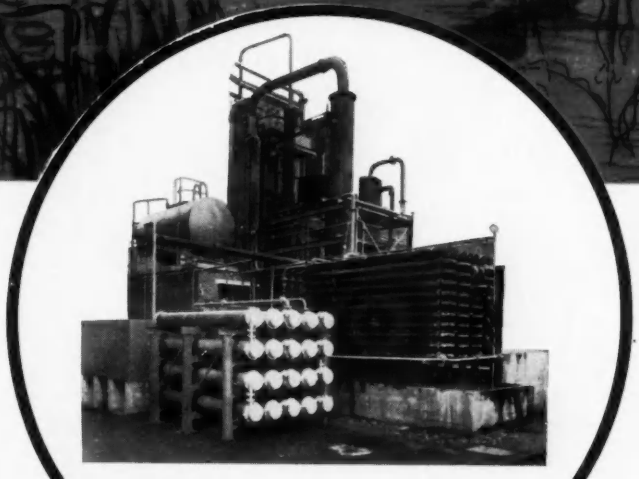

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Effluent treatment plant by **Simon-Carves Ltd**

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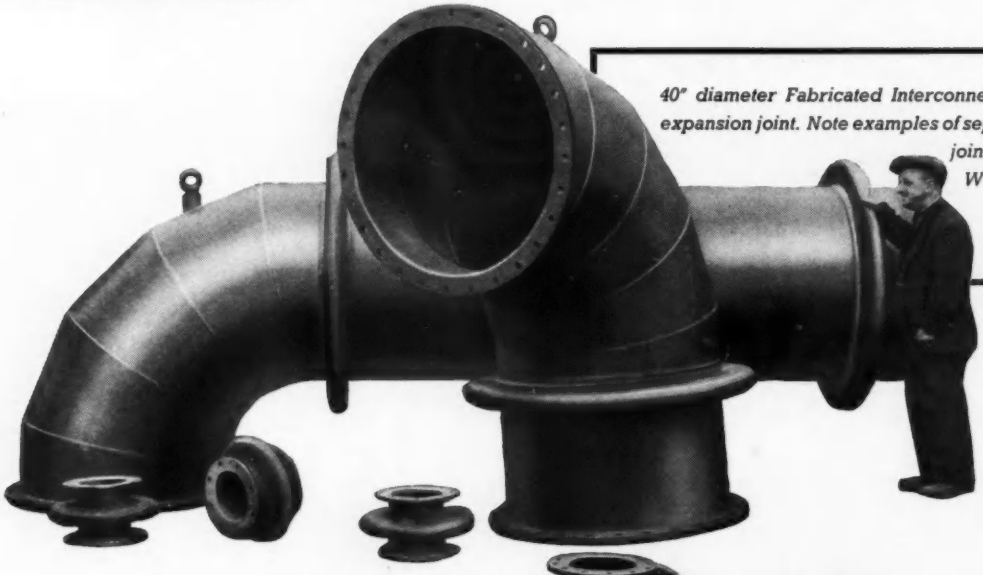

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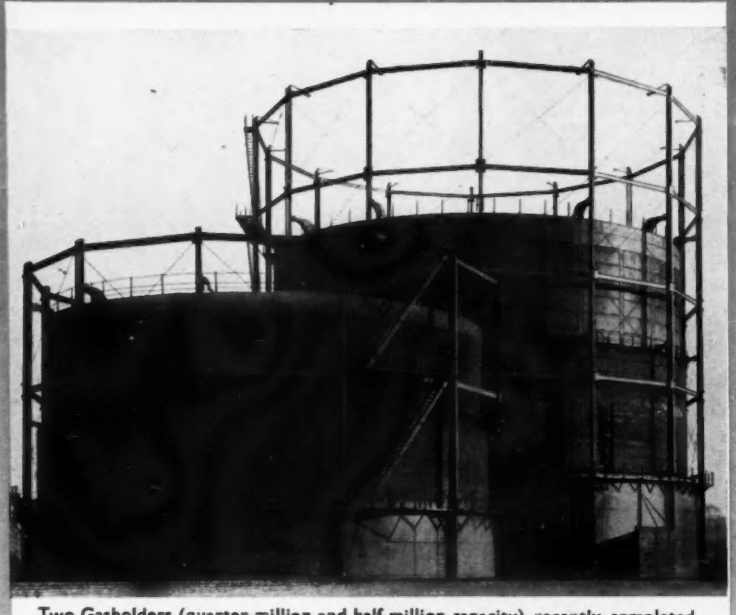

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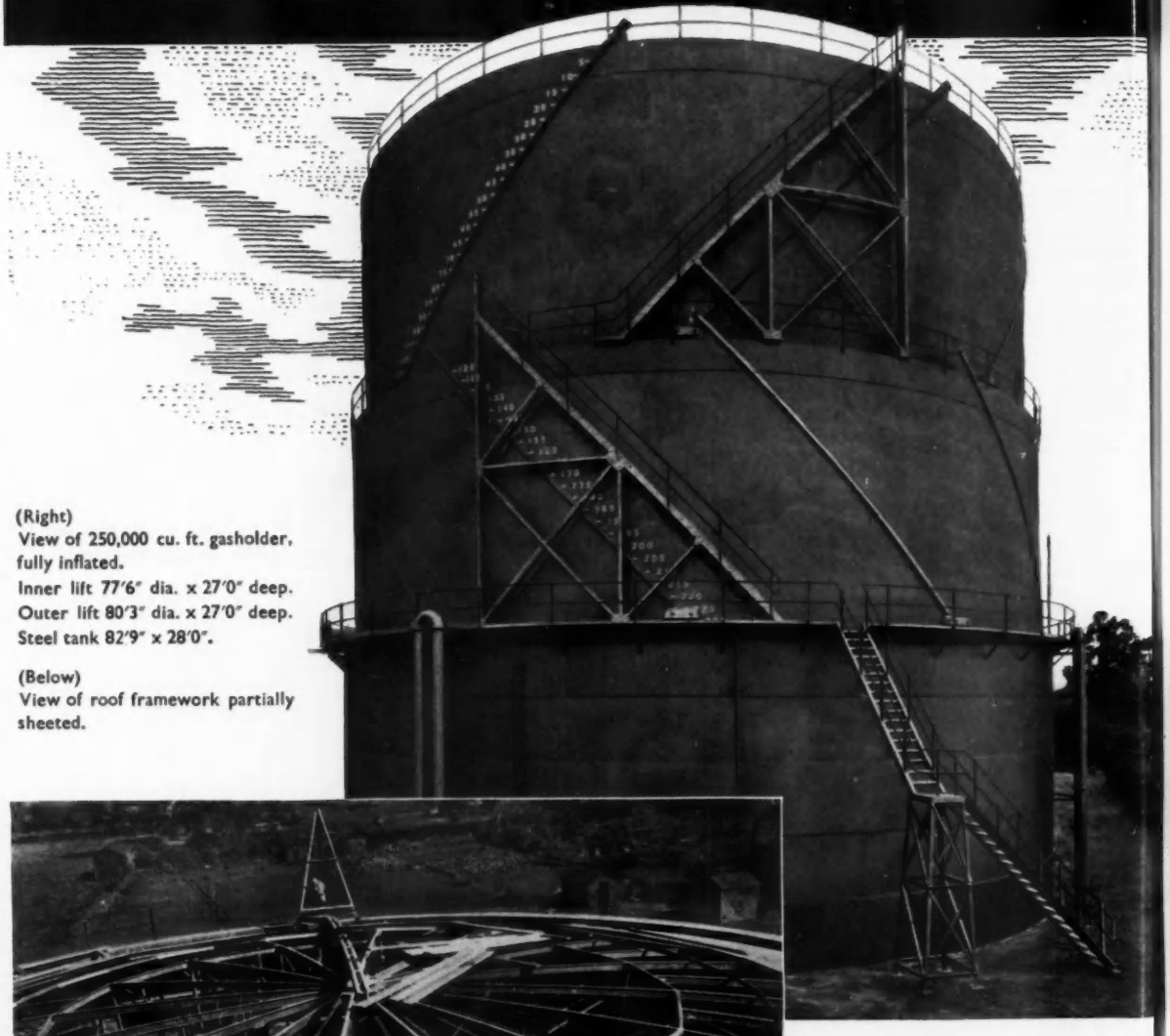

(Right)
View of 250,000 cu. ft. gasholder, fully inflated.
Inner lift 77′6″ dia. x 27′0″ deep.
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(Below)
View of roof framework partially sheeted.

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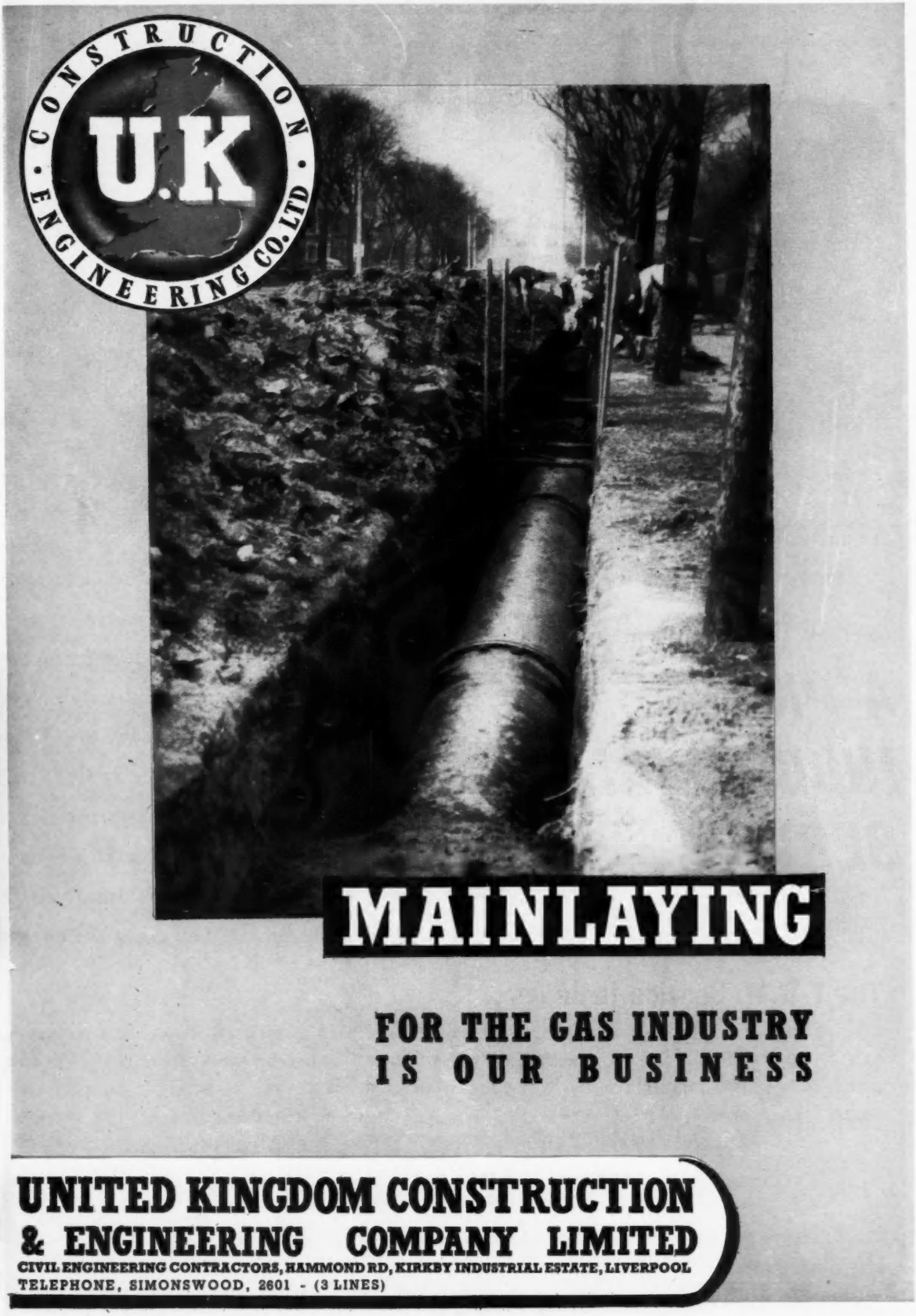
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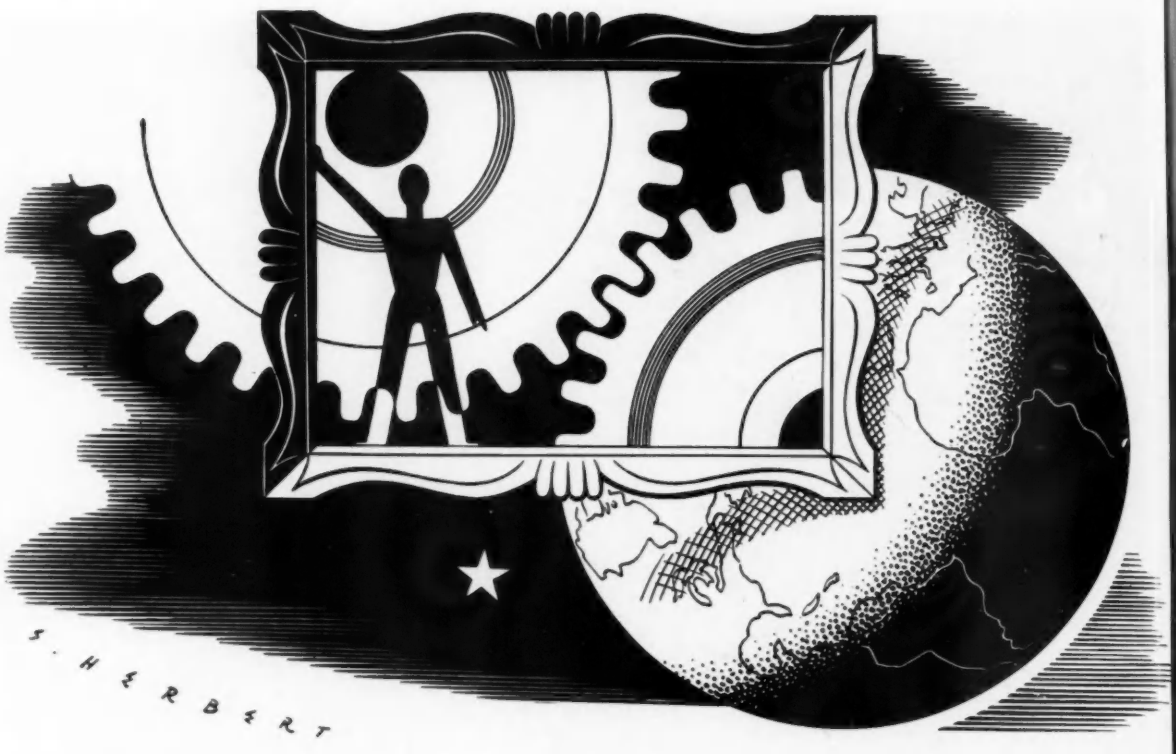

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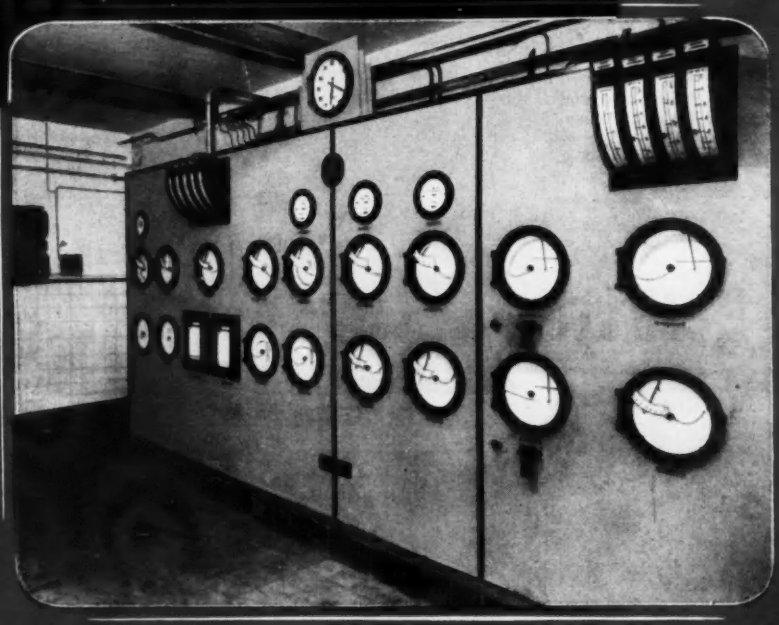

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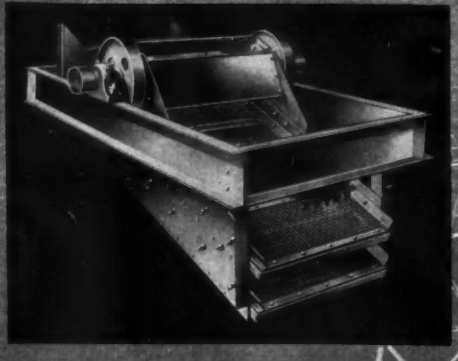

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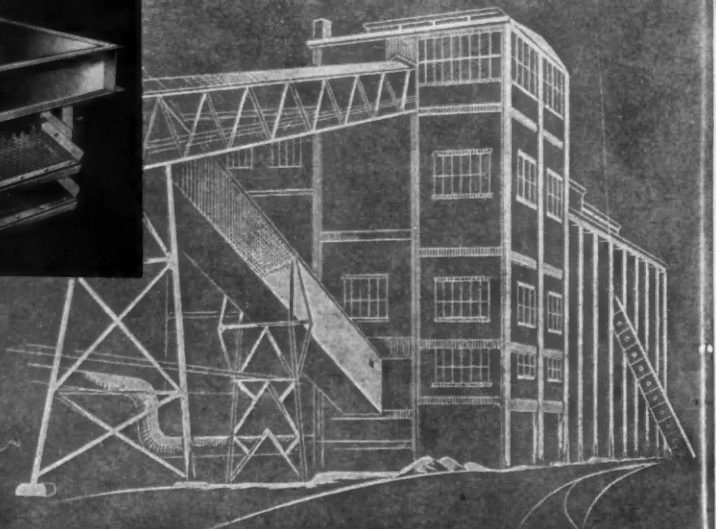

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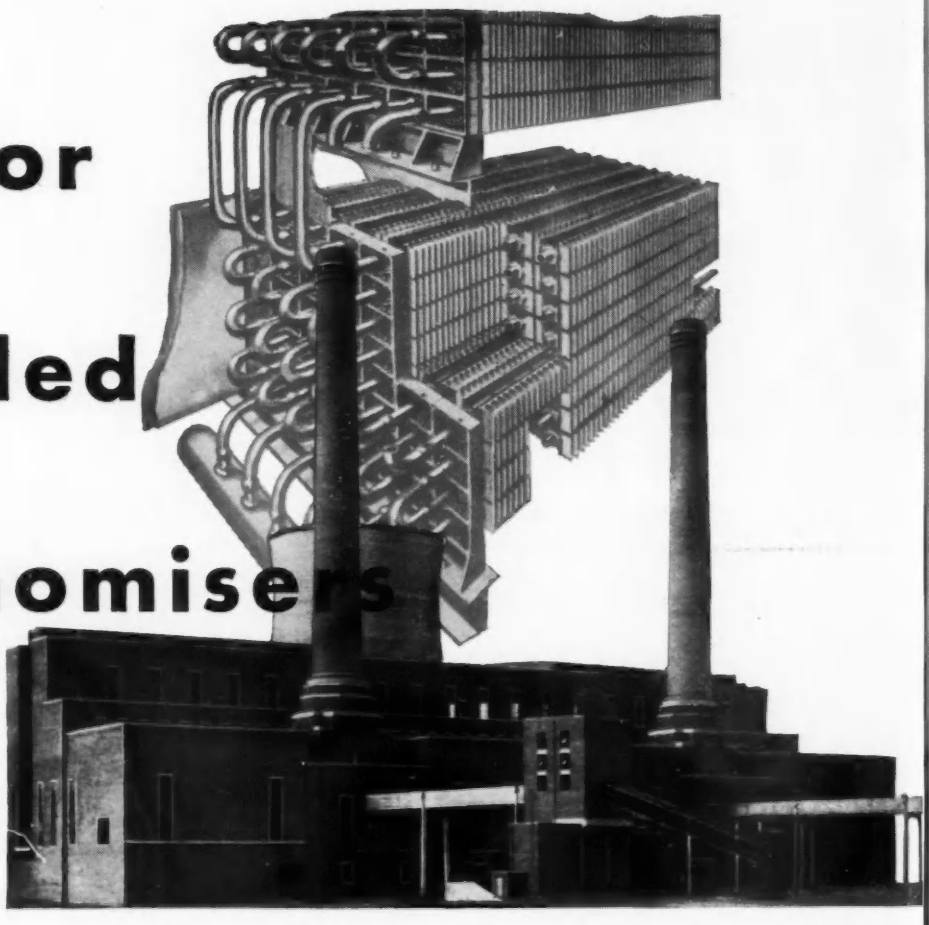

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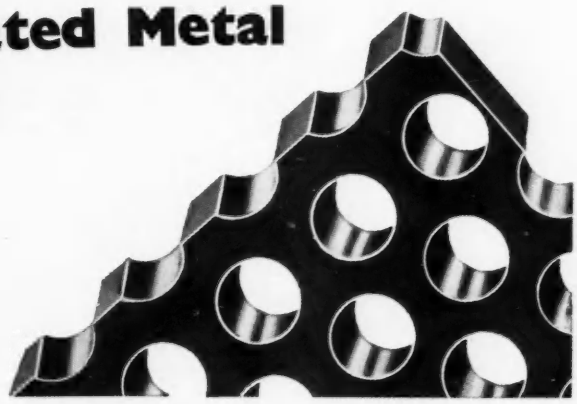

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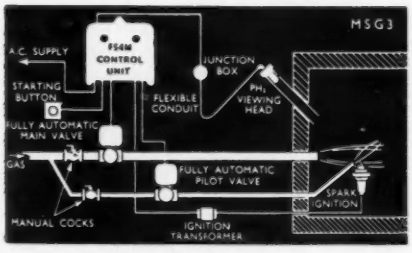

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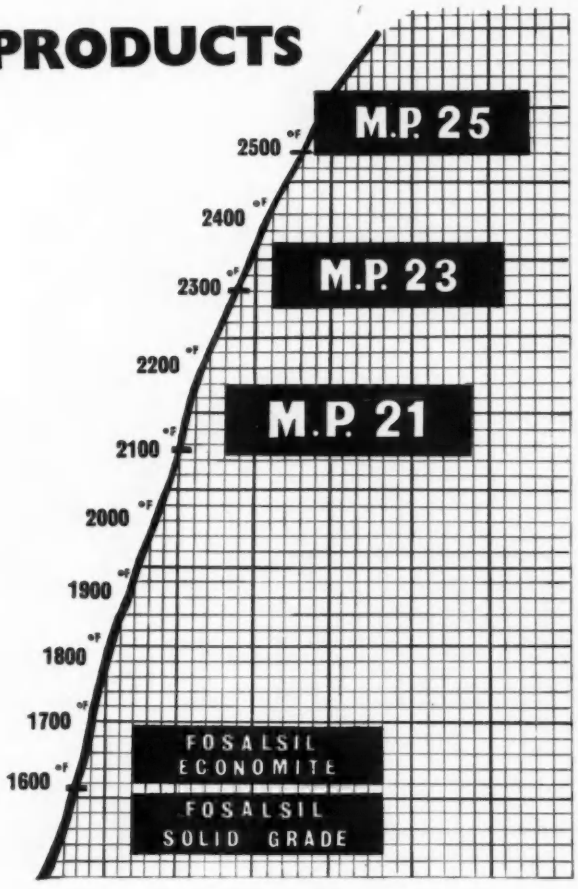

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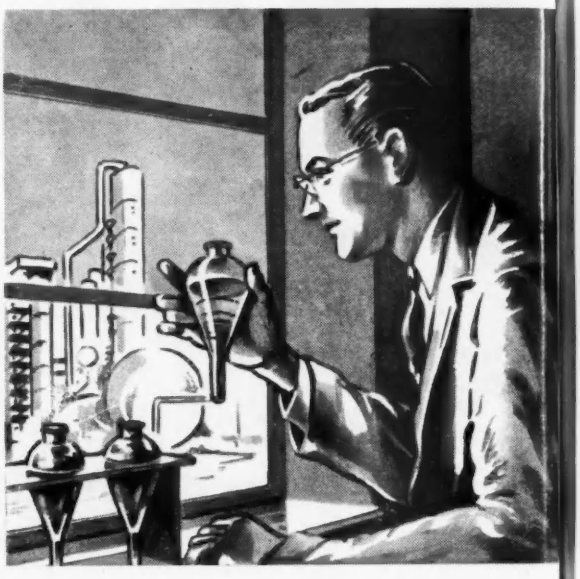

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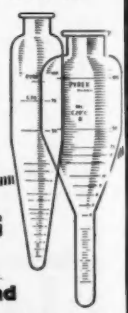

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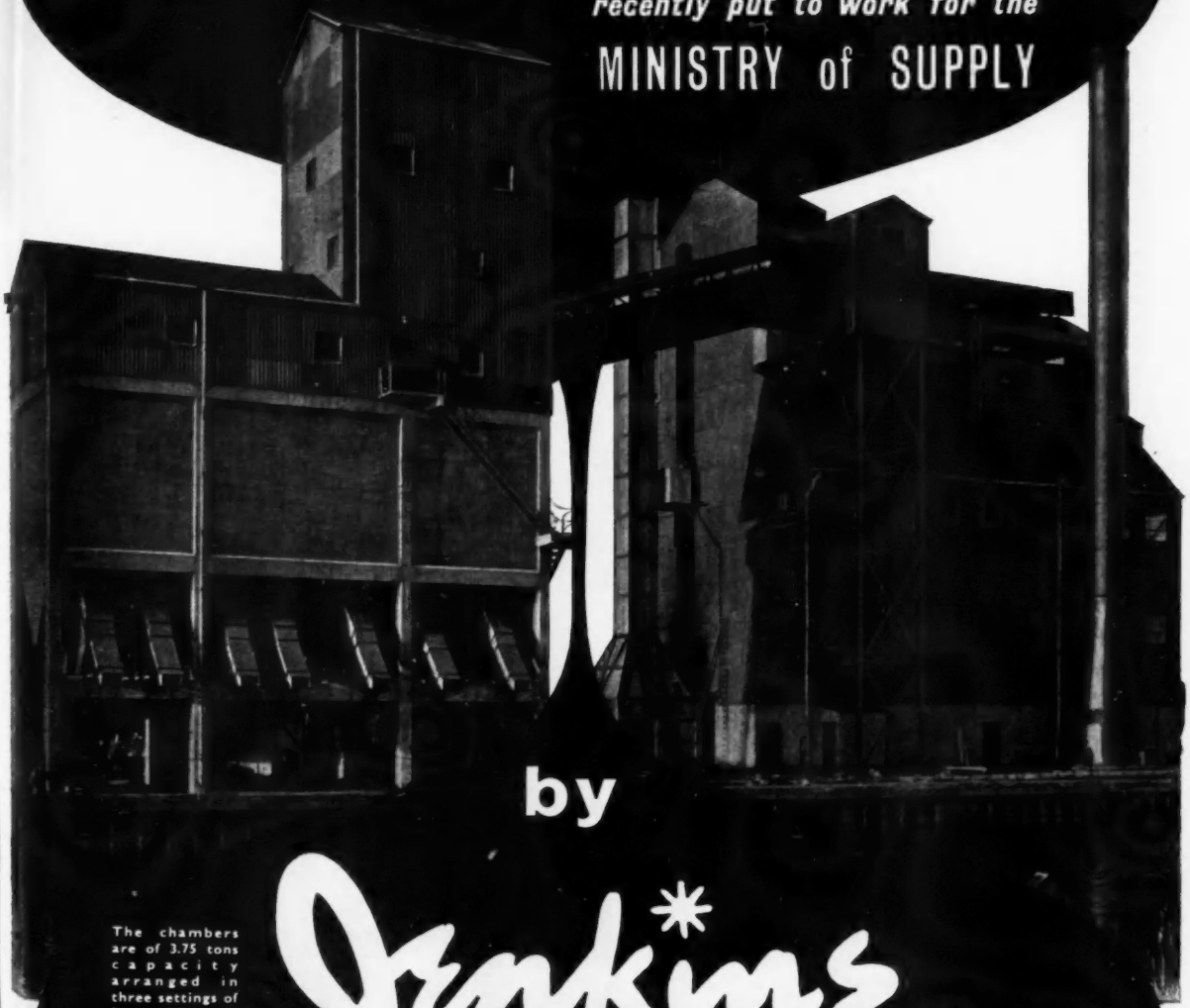

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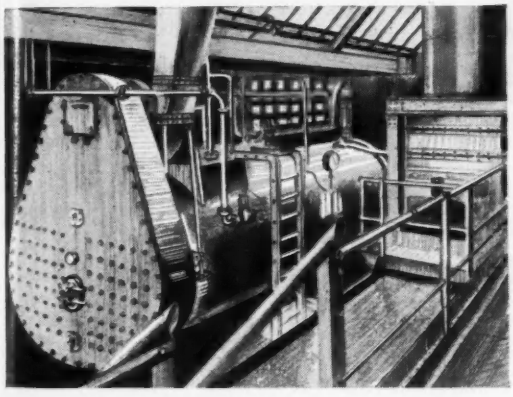

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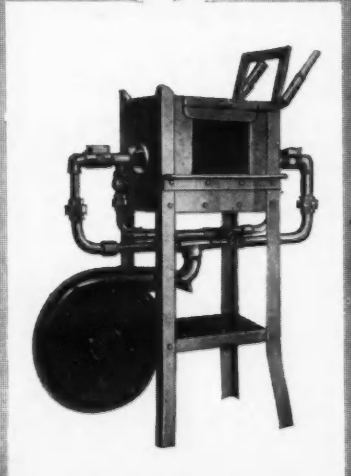

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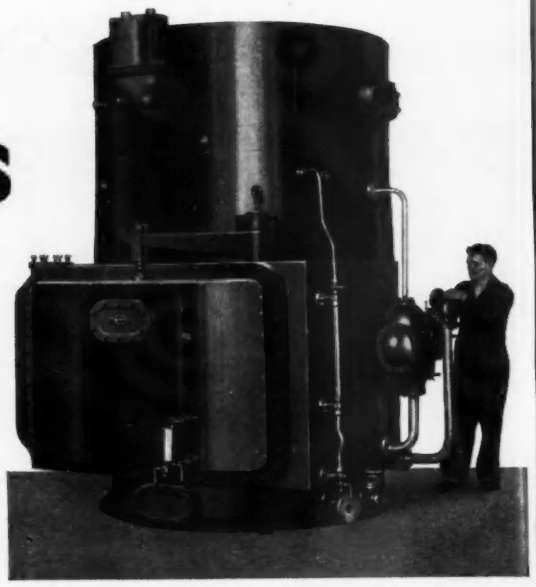

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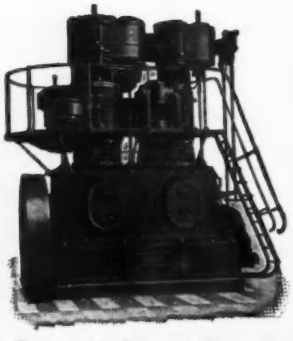

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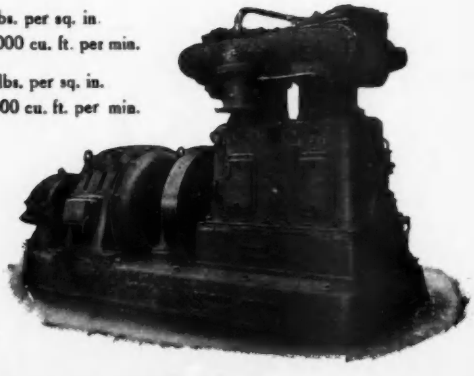

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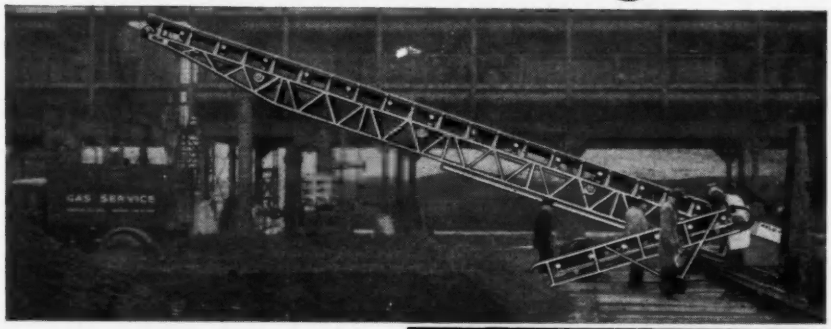

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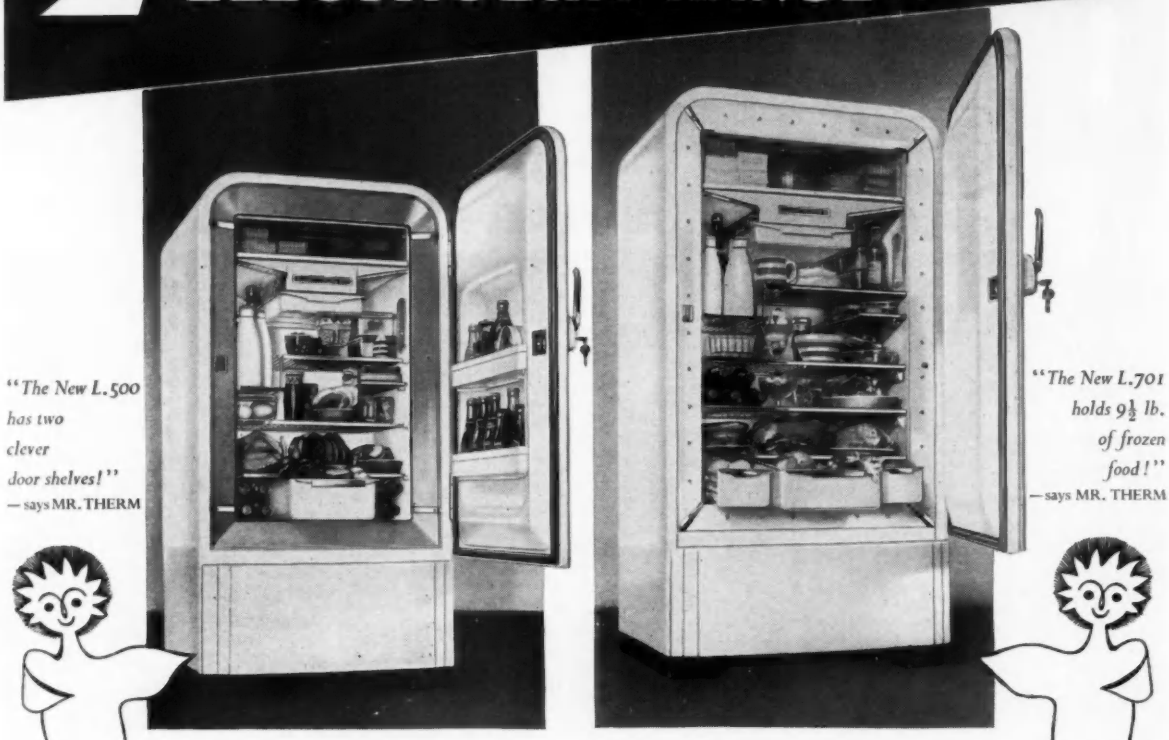

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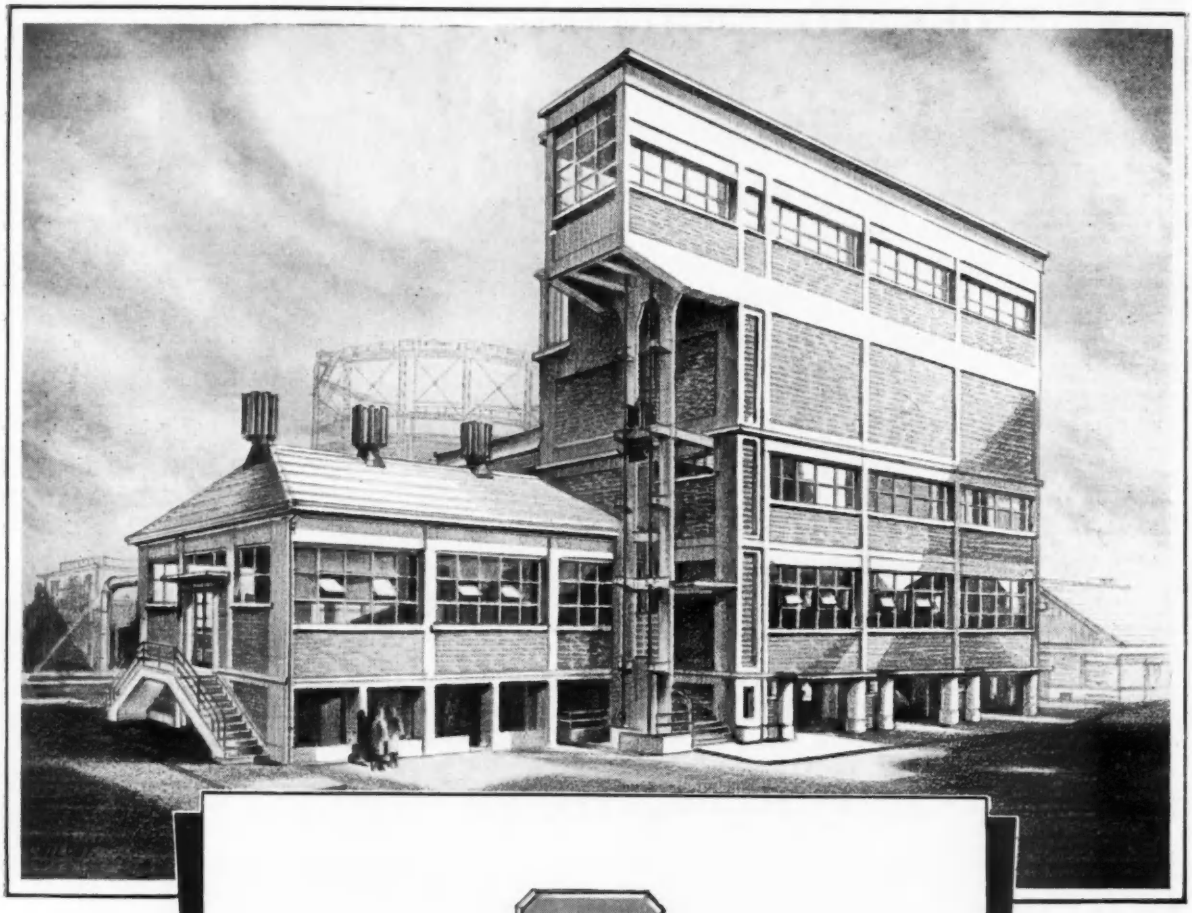

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£5 mill. a Year on Mains Repairs.

Lieut.-Colonel M. Lipton (Lab. Lambeth, Brixton) asked the Minister of Fuel and Power what steps are being taken to prevent loss of life caused by defective gas mains.

Mr. Geoffrey Lloyd replied that the gas boards are now spending over £5 mill. a year on the maintenance of gas mains, and they had a day and night service to deal with any escape of gas as soon as it was reported.

Lieut.-Colonel Lipton : 'Is the Minister aware that recently there have been several unfortunate deaths from this cause, and that in one case it was ascertained that the mains had not been thoroughly examined since they were first laid in 1888? What is being done to speed things up in that direction?'

Mr. Lloyd said that very cold weather constituted a special danger in regard to the fracture of gas mains.

Mr. S. Hastings (Lab. Barking): 'Is there any means of ascertaining when corroding of gas mains has taken place so that leakage is imminent?'

Mr. Lloyd: 'I should have to make special enquiries before I answered that technical question.'

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Gas Journal

106th YEAR OF PUBLICATION

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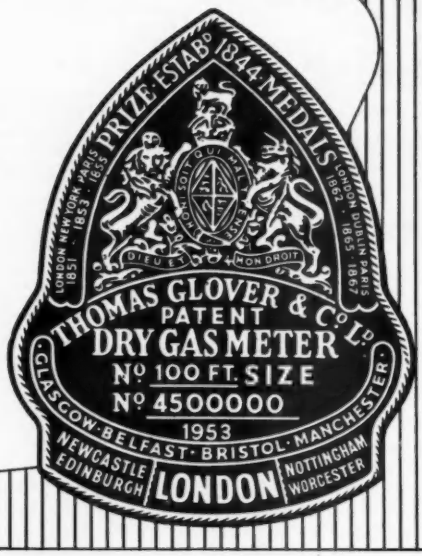

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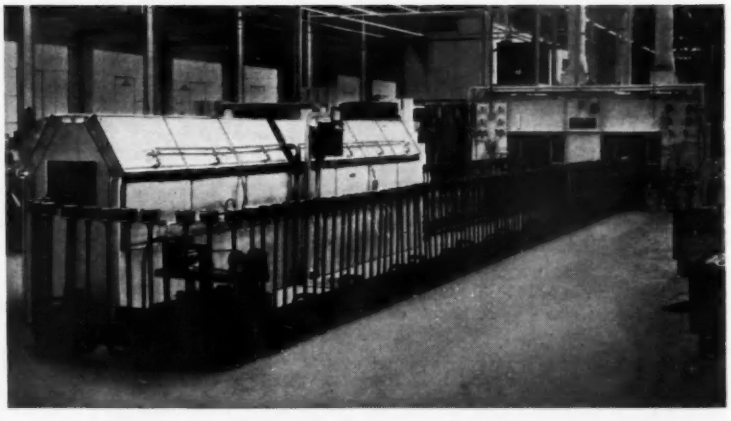

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Gas Journal

VOL. 279. No. 4759 106TH YEAR August 18, 1954

THE ASSOCIATION TECHNIQUE

We congratulate our French confrères on the success of the 71st annual meeting of L'Association Technique de l'Industrie du Gaz en France. If we are amazed at the large number of papers which were presented and discussed by the Association in Paris in June, and of which we have published brief abstracts, we must remember that our French colleagues do not run an autumn research meeting, so that theory and practice, realisation, accomplishment, and research, have all to be covered in one meeting. At any rate we hope that our report will leave no one here in any doubt of the high quality of the communications received and discussed, or of the industry, ability and learning displayed in them. The importance of the Lorraine coal-field to the gas and coke industry was reflected in a fine paper by Dr. Schwarz, whom we presume we may describe as leading scientist to the coal-field, in which he sets out the properties and qualities of these coals, together with descriptions of the methods by which these are ascertained. The interesting point is that these coals are of substantially the same geological age and formation and that such differences as do exist are best indicated by the swelling index. Professor Louis Longchambon contributed reflections on coal as a hydrophil colloid. Heat treatment leaves intact, he says, constituents which are 'hydrophils' while those which are sensitive to pyridine extraction are destroyed. Carbonising tests are represented by a paper on the Jenkner (laboratory) retort, by a method of continuous weighing of the coal sample under test, but above all by one of the high lights of the Congress—the first exhibition of a film obtained by radiography of carbonisation (cokefaction) in progress, particularly the progress of the plastic zone through the heated mass.

The continued preoccupation of the French gas industry with oil gas as an auxiliary is shown in the paper on oil-cracking in the W.D. vertical retorts at Clichy. There are still a large number of isolated, small works which must keep going and which must face their own problems of the peak load, with the addition of producer gas enriched with propane, raising the questions of interchangeability so ably dealt with by M. Delbourg. Here may be mentioned the announcement by the President of the work of the Commission on Manufacture on a manual for the use of managers of small and medium capacity works, 'which will contain the essential practical directions for the operation of retorts, whether to produce the maximum of gas per ton of coal or, on the other hand, the maximum of gas per unit of time.' Problems in the pre-treatment and mixing (something short of true blending) of coals to produce high quality coke also received a good deal of attention.

An interesting practical paper described the reconstruction of a setting of Glover-West verticals at La Rochelle. Here each line of four small retorts was replaced by two large retorts with the twin worm coke extractors, on lines similar to those at Belfast which were described some years ago. At La Rochelle the heating gases were re-arranged to enter from both sides of the setting, on the lines of the so-called 'balanced heating' but instead of the gases mingling freely on the centre line of the setting, a division wall was built in that position; one wonders why. Perhaps the most significant remark arising out of the two papers describing the treatment of condensates, the recovery of tar and the concentration of ammoniacal liquor from both intermittent and continuous verticals at Nanterre, was that 'the days of this works are numbered.' Concentration of manufacture in the larger installations is of course inevitable but one would have thought that its situation in relation to water-borne transport on the Seine would have given Nanterre a longer lease of life. The problem of the improvement of effluents is taking the way at Vierzon of separation at the source. It is probably not so urgent as in our more densely populated country.

M. A. Bolzinger summed up the significance of M. Bramslev's paper, on the simultaneous reaction of iron oxide with hydrogen sulphide and oxygen, in the remark that these laboratory investigations were going on concurrently with British work on dry purification on the industrial scale. 'Purification includes some very complex reactions, and the separate study of these reactions studied by M. Bramslev must lead to a better understanding of these phenomena.' M. René Fort made a contribution to the fundamental aspects of fluidisation, a technique which is sure to come soon to the fore in purification and perhaps in the gasification of the future.

Distribution was represented by a number of papers.

theoretical and practical. Large volumes of gas are measured at Gennevilliers in an interesting double venturi, enabling gas flow to be measured by observation of differential pressure in little space and with little loss of pressure. For the flow measurement of natural gas at very high pressures, the calibrated orifice is used. Gum is a problem in the distribution system of Paris. M. Bolzinger suggested that it might be well to avoid the introduction of oxides of nitrogen into the gas stream; these compounds were inevitable with the admixture of products of combustion and producer gas. The removal of dust from the gas stream may be necessary in this country as the absorption of coke oven gas in town gas grows; if so, M. Puybaudet's oil washing apparatus may be of interest. But perhaps the most interesting paper in this section was that covering the testing of several plastic materials for the fabrication of tubes for distribution purposes. Certain plastics were found to possess properties which promised well, leaving risks well worth taking if they should be found to be cheaper than the usual materials when made up into tubes.

Utilisation was also well represented, in the use of overhead radiators for space heating (particularly where the psychological feeling of comfort was more important than the actual raising of air temperature), in the use of infra-red heating, in the continuous control of humidity by means of an electrical hygrometer, and a more abstruse study of the viscosity of binary gases —a technique which might be of considerable assistance in the analysis of natural gas which is a mixture 'whose constituents show little chemical activity other than that of combustion.'

OPERATION RESCUE

It is obvious that most of the gas industry's business is dependent on housing—so obvious in fact, that its broader aspects have been overlooked by some sales staff who are preoccupied with immediate problems. Many of those problems are concerned with new housing about which much has been written and talked. The gas load resulting from new installations in older houses was something of a neglected subject—until thrown into prominence by the Government's decision to stop further deterioration of existing dwellings and to give many of them more modern facilities to enable their useful lives to be extended. The way in which this new move affects gas business is a matter of immediate concern and it was this which prompted our sister journal 'GAS SERVICE' to devote much of its editorial comment in the August issue to this question of 'Old Houses—New Business.' This seeks to put the new Government policy into perspective and gives some interesting figures relating to the older houses on which the Government grant may be spent.

The basic figures are as follows: There are some 13½ mill. individual dwellings in Great Britain today, comprising 3¾ mill. occupied by owner-occupiers, 2½ mill. provided by local authorities, new town corporations and housing associations, and 7¼ mill. rented from private landlords. Those owned by the owner-occupiers and the local authorities, housing associations, etc., have generally been constructed since 1919, and are designed on fairly modern lines. Amenities and standards compare with those provided today. The 7¾ mill. owned by the private landlords are in the following categories: 2¼ mill. are 100 years old or more, a further 1¾ mill. more than 75 years old, and ¾ mill. over 65 years old. In the light of modern housing practice, it has been usual to give the economic life of a dwelling as 60 years. Not all these older houses are in a bad state of repair, but it is reasonable to suppose that the group which is over one hundred years old contains the bulk of the property which may have to be condemned and demolished. It is the 2½ mill. over 65 years old and less than 100 which principally concerns us.

As 'GAS SERVICE' puts it: 'There are properties appropriate for improvement in the area of every local authority—namely, houses which comprise reasonable accommodation and are sound in structure, but are without proper amenities. They may be too large for present day single family occupation, but be capable of conversion into comfortable self-contained flats. Such houses or flats, if provided with bathrooms, hot water, up-to-date cooking and other equipment, could give many years of useful service. Now that a landlord can obtain an improvement grant from the local authority which would amount to half the cost of the improvements (and increase the rent by 8% per annum of the sum he pays himself), much work of this type will be carried out. The Ministry requirements which have to be met before the local authority grant is made include a fixed bath and running water, domestic washing facilities, and adequate cooking facilities. This is where gas can come into the picture—if the idea is properly sold. A great many of the houses under discussion already have gas laid on and installation costs can be very slight. Here is an excellent case for sink and multipoint water heaters, not to mention cookers, and so forth.

Many of these older houses are too large and inconvenient for the 1954 living pattern, and as the admirable Ministry of Housing exhibition in Holles Street has shown, these can be converted into compact modern flats to house more families. At that exhibition it is solid fuel which steals the thunder, but the opportunity for gas business is there if our salesmen are quick off the mark. It is a sobering thought that when gas lighting has been replaced by electricity and a back boiler has superseded the pails on the cooker hotplate, we may lose a valuable load. It can only be saved, and maybe increased, by action—now.

FLOODLIGHT

One of the best annual buys for the Londoner is the London County Council's classic publication *Floodlight* (price 6d. from bookstalls). This describes how, for only a few shillings and a series of headaches, one can acquire a vast wealth of knowledge during the winter months. An idea of the breadth of subjects covered at London's evening institutes is given when we say that there are more than 500 subjects listed alphabetically—from accountancy to zoology. Under 'Gas' are listed the institutes where engineering, fitting, law and accounts, and salesmanship and consumer service may be studied. But lest we get into the intellectual groove, we are also offered courses in corsetry, criminology, and current affairs. The cost of attending these classes is still remarkably low. For example, a technical course, leading to a final degree or professional equivalent, costs only £2 5s. for the session. Fees such as these represent a bargain which it would be

difficult to equal. From September 7, when the classes begin, the owner-driver will be able to resume his course in vehicle servicing, the housewife can return to millinery or toy-making, the handyman will be able to take up paper-hanging or rabbit keeping. Whatever one's ambition or fancy, the L.C.C. is sure to have an evening class in which it will be both profitable and enjoyable to take an active part.

Personal Notes

MR. C. H. UNDERHILL, District Manager at Burton, has been promoted District Manager of the Derby Undertaking of the East Midlands Gas Board and will take up his appointment next month.

MR. C. A. MACLEOD has been elected to the Board of Main Refrigeration, Ltd., and appointed Sales Director. Mr. Macleod is also Sales Director of R. & A. Main, Ltd., and Main Water Heaters, Ltd.

MR. L. MATTHEWS, who was previously appointed as Acting Manager to the Menai Bridge and Beaumaris undertakings of the Wales Gas Board, has now been confirmed as Manager of those undertakings.

MR. COLIN J. BARKER has been appointed General Managing Director of the Wellman Smith Owen Engineering Corporation, Ltd., and MR. F. H. BROOKS has been appointed Managing Director in charge of production and technical development.

SIR JOHN GREAVES has decided for personal reasons to relinquish his position as Managing Director of Davey, Paxman & Co., Ltd., on September 30, and although he will continue as a Director of Ruston & Hornsby, Ltd., he will retire from the Davey Paxman Board. Mr. G. W. BONE, Assistant Managing Director, will succeed him as Managing Director.

MR. W. J. BAKER, M.I.MECH.E., A.M.I.CHEM.E., who became General Manager of the South Western Gas Board in the re-organisation which took place earlier this year, has now been appointed by the Minister of Fuel and Power to be a full-time member of the Board, with effect from September 1. For eight years, from 1932 to 1939, Mr. Baker was Engineer-in-Chief and Manager of the Shanghai Gas Company, and in 1936 he contributed a paper on 'The New Gasworks at Shanghai' to the Institution of Gas Engineers, though he could not attend the meeting in June of that year when his paper was presented and discussed. Returning to this country in May, 1939, Mr. Baker occupied for some time the position of Deputy Engineer and Works Manager of the Bristol Gas Company. In 1942 he was appointed Engineer and General Manager of the Weston-super-Mare and District Gas Company, and when the industry was nationalised in 1949 he became Weston-super-Mare Sub-Divisional Manager. He was appointed General Manager of the South Western Gas Board's Northern Division, based on Bristol, in 1952, and as already mentioned took over the duties of Area General Manager in April in succession to Mr. J. Carr, who at that time was appointed Deputy Chairman of the Board. As a result of Mr. Baker's appointment, the South Western Board becomes the first to have three full Members of the Institution of Gas Engineers holding the principal full-time seats.

MR. F. W. WHITING, B.SC. (ENG.), A.M.I.E.E., has been appointed Lancashire Dynamo Group branch manager for the Nottingham area as from September 1. Mr. Whiting was educated at St. Johns College, Hurstpierpoint, and took an engineering degree course at Brighton Technical College. He then served a technical apprenticeship course at Trafford Park and Willesden Works of L.D.C. and joined the Company's London office staff as service and estimating engineer. In 1946 after was service he joined the Nottingham sales office staff where he served as assistant to the area sales manager.

NORTH WESTERN GROUP OFFICERS

In the 'JOURNAL' of May 5 we published details of the re-allocation of group managerial posts involved by the re-organisation of the area of the North Western Gas Board into 11 groups in place of the former 17. The Board has since issued details of further appointments consequent on the group re-organisation. They are as follows:

CENTRAL LANCASHIRE GROUP
- T. W. Pickthall, Production Engineer.
- I. Morgan, Group Accountant.
- C. Rothwell, Assistant Accountant.
- A. Entwisle, Sales and Service Officer.
- F. Cartledge, Distributing Engineer.
- J. R. Hunt, Deputy Group Distributing Engineer.
- J. Oates, Industrial Gas Engineer.

EAST LANCASHIRE GROUP
- D. V. Lewis, Production Engineer.
- R. Wilson, Deputy Group Production Engineer.
- J. Edmonds, Sales and Service Officer.
- R. M. Parker, Distributing Engineer.
- R. W. Harris, Deputy Group Distributing Engineer.
- J. Ward, Group Industrial Gas Engineer.
- F. R. Shepley, Assistant Accountant.

FYLDE GROUP
- R. H. Mason, Group Accountant.

MANCHESTER GROUP
- W. T. Hainsworth, Station Engineer—Rochdale Road Works.
- E. Sharples, Station Engineer—Regent Road Works, Salford.

MID-CHESHIRE GROUP
- W. Mottram, Group Sales and Service Officer.

NORTH CHESHIRE GROUP
- G. Gilden, Production Engineer.
- G. B. Carter, Group Industrial Gas Engineer.
- A. B. Todd, Technical Officer—Sales and Service.
- L. Jackson, Administrative Assistant.
- G. Shortland, Station Engineer— Buxton.

NORTHERN GROUP
- P. H. J. Price, Production Engineer.
- G. R. Spence, Assistant Group Production Engineer.
- F. C. Buckley, Assistant Group Production Engineer.
- J. Search, Sales and Service Officer.
- W. N. Battersby, Group Distributing Engineer.
- R. Hayes, Distributing Engineer—Kendal and Furness districts.
- J. Graham, Distributing Engineer—Lancaster and Morecambe.
- G. Dixon, District Service Manager—Barrow district.
- R. Sharrock, Industrial Gas Engineer.

PRESTON GROUP
- N. Spratt, Group Accountant.

WIRRAL GROUP
- H. S. Elles, Industrial Gas Engineer.

Diary

Sept. 1.—SOUTHERN G.C.C.: Reading, 2.30 p.m.

Sept. 7.—SOUTH EASTERN G.C.C.: Hotel Metropole, Brighton, 11 a.m.

Sept. 7.—EAST MIDLANDS G.C.C.: Victoria Station Hotel, Nottingham, 11.30 a.m.

Sept. 7-18.—BRITISH FOOD FAIR. Olympia. Gas Council exhibit.

Sept. 8.—SOUTH WESTERN G.C.C.: 34, Bridge Street, Taunton. 11 a.m.

Sept. 14.—INSTITUTION OF HEATING AND VENTILATING ENGINEERS: 'Current American Practice in Heating, Ventilating, and Air Conditioning,' John K. M. Pryke; at the Institution of Mechanical Engineers, 1, Birdcage Walk, S.W.1., 6 p.m.

Sept. 14-17.—ASSOCIATION OF PUBLIC LIGHTING ENGINEERS. Annual Conference and Exhibition of Street lighting Apparatus and Equipment. Eastbourne.

Sept. 16.—SCOTTISH ASSOCIATION OF GAS MANAGERS: Annual General Meeting, Cowdray Hall, Aberdeen; Golf and Bowling Competitions on Sept. 15; Annual Outing on Sept. 17.

Sept. 20.—EASTERN G.C.C.: Connaught Rooms, Kingsway, W.C.2. 2 p.m.

Sept 22.—MANCHESTER AND YORKSHIRE JUNIORS: Joint Visit to Tingley Gasworks.

Sept. 22.—WALES AND MONMOUTHSHIRE SECTION, I.G.E.: Annual General Meeting, Swansea.

Sept. 22-23.—IRISH GAS ASSOCIATION. Annual Meeting. Bundoran, Co. Donegal. Presidential Address, R. F. Pollock (Enniskillen); 'Gas Manufacture by the Tully Process,' J. E. Tully; 'Gasification Plant Developments,' N. J. Robertson.

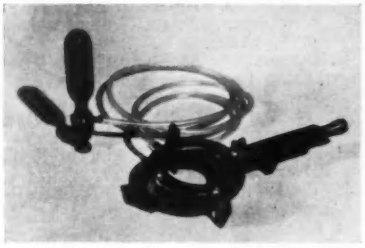
Sept. 23.—EAST MIDLANDS GAS BOARD SALES AND SERVICE CIRCLE, Notts. and Derby Division, Annual General Meeting. Nottingham. Speaker: W. Burnstone, Chief Assistant Solicitor, Area Headquarters, on 'Legal Aspects.'

ALL IN THE SAME CHAINS

Mr. C. J. Mills, Mayor of Leyton, invited three other mayors and their ladies to tea one afternoon. What did they all have in common besides their chains of office? They are, or were, all employed by the North Thames Gas Board. By a coincidence, says the Board, a cameraman happened to be there and here are the four mayors, left to right: Mr. E. J. Cauldwell, Mayor of Poplar, who is at the Bow Common works; Mr. Mills, who works at Hackney; Mr. W. J. Gooderham, Mayor of Ealing, of the Fulham laboratories, and Mr. J. Connor, Mayor of Brentford and Chiswick, who retired as a representative at Ealing about 18 months ago. Their combined service in the North Thames area of the gas industry totals 120 years.

Hey Presto!

In a recent children's hour on television, the popular puppet 'Sooty' produced a gas ring which was not connected to a gas supply, and yet managed to light it as if by magic. The producer of the programme, Mr. Harry Corbett, is apparently a native of Yeadon, near Leeds, and he called on the North



So simple when you know how!

Eastern Gas Board industrial staff at Bradford suggesting the germ of the idea, and sought assistance.

In a short time the staff produced a gas ring connected by a narrow plastic tube to a little bottle of butane, and our photograph shows the actual gadget which Mr. Corbett used. In the programme the butane bottle and transparent flex were invisible.

The incident was an example of how the technical men of the gas industry are always able to pull something out of the bag, no matter what the problem.

A New Unit.—The industrial gas engineering section and the industrial workshops (including the showroom), which have hitherto been included in the general activities of the North Thames Gas Board at Watson House, are together to form a separate unit. The Deputy Commercial Manager, Mr. T. V. Garrud, will be responsible to the Board for the unit; the Senior Industrial Gas Engineer, Mr. H. W. Grover, will be responsible to the Deputy Commercial Manager. The industrial laboratory at Watson House is unaffected by the change and will continue within the responsibility of the Manager, Watson House.

MILNE-WATSON AWARD

Awarded annually by the North Thames Gas Board to its most promising employee of the year, the Milne-Watson Scholarship goes this year to 25-years-old Michael D. Webb, a draughtsman in the distribution drawing office at Fulham.

The Scholarship, founded in 1946, is in memory of the late Sir David Milne-Watson, who was keenly interested in the welfare and further education of his employees. It is tenable at a university, college or technical institute (to the holder's choice) for a degree or technical course. Leave of absence with pay is given, and a grant made to cover all out-of-pocket expenses and fees.

Mr. Webb has been with the Board for the past 9½ years, having started his career in 1945 as a junior draughtsman. He is keenly interested in distribution work, and has already obtained his National Certificate in Mechanical Engineering. He hopes to gain Associate Membership of the Institution of Civil Engineers, and now that he has won this Scholarship, plans to take a three-year course at Enfield Technical College starting this autumn.

Michael Webb on the job

CRICKET AT STECHFORD

Our photograph shows members of the cricket team of the Cardiff undertaking, with their supporters, on the occasion of their visit to Stechford when they played the cricket team of the Parkinson Stove Co., Ltd.

Mr. R. J. Rogers (Chairman), Mr. J. L. Anstey (Sales Manager), and Mr. Arthur Sadler (Area Manager), supported the Parkinson team and acted as hosts to their guests whom they entertained to luncheon and tea. A brilliant stroke by the last batsman enabled Parkinson to win by one run.

The Parkinson cricket team afterwards made a seven-day tour of Wales where they played the teams of Port Talbot, Cardiff, Area Headquarters Staff, Newport, Abertillery and Aberystwyth undertakings of the Wales Gas Board.

CANADIAN GAS ASSOCIATION

Photo: Canadian Pacific Railway

The Banff Springs Hotel in its magnificent Rocky Mountains setting.

Some 300 members attended the 47th Annual Convention of the Canadian Gas Association, held at Banff Springs Hotel, Banff, Alberta. This was a record party; including the ladies there were about 500 delegates. The hotel and its surroundings vied in attractiveness with the programme of important topics to be discussed.

The Opening General Session was held on Monday morning, June 21, when the President, D. K. Yorath, General Manager, Northwestern Utilities, Edmonton, Alberta, occupied the Chair. He welcomed the visitors, and read letters of greetings, including that from the President of the Institution of Gas Engineers, the bearer of which was Mr. R. T. Redfern (Managing Director of The Bryan Donkin Company). Hearty applause ensued, and Mr. Yorath pointed out that this was only the third occasion on which a member of the Institution of Gas Engineers had attended their Convention, the previous occasions being in 1933 and 1947. He went on to say it was a matter of regret to all that the President-Elect, Mr. S. B. Severson, Dominion Natural Gas Company, Buffalo, was unable to attend owing to indisposition.

After the formal business was completed a welcome was extended by Mr. B. I. M. Strong, Superintendent of Banff National Park, who gave an informative and most interesting account of this natural animal sanctuary lying 5,000 to 10,000 ft. above sea level.

The theme of the President's address was the immensity of the task before the Dominion in sponsoring and putting into operation the projected natural gas pipeline across Canada, and that of the Utility Companies in selling and distributing the gas. Following the address, the Hon. Gordon E. Taylor, Minister of Highways, Government of the Province of Alberta, gave an inspiring exposition of 'Individual Enterprise,' which the Albertians, in particular, strongly uphold. The opening session was brought to a close by the President of the American Gas Association and President of Boston Consolidated Gas Company, Mr. E. H. Eacker, whose address envisaged new horizons to be reached by the colossal enterprise now in embryo.

In the afternoon the members attached themselves to one of four Group Discussions:

(a) **Sales and Promotion.** Chairman: J. H. Taylor, Residential Sales Manager, British Columbia Electric Company, Vancouver, B.C.

(b) **Accounting and Finance.** Chairman: F. R. Palin, Comptroller and Treasurer, Union Gas Company of Canada, Chatham, Ontario.

(c) **Production and Transmission.** Chairman: H. M. Hunter, General Superintendent, Canadian Western Natural Gas Co., Ltd., Calgary, Alberta.

(d) **Distribution.** Chairman: E. H. Wright, Manager of Distribution, Northwestern Utilities, Ltd., Edmonton.

On Tuesday, June 22, the morning session was devoted to three very interesting and comprehensive papers arranged by the Manufacturers' Section under the Chairmanship of Mr. A. J. Strain, General Manager, Ruud Manufacturing Co., Mimico, Ontario. These were entitled:

'Natural Gas Comes to Saskatchewan,' by J. R. Sarsfield, Business Manager, Saskatchewan Power Corporation, Regina, Saskatchewan.

'Sales Policies for Natural Gas in Canada,' by W. C. Mainwaring, Vice-President and Assistant to the President, British Columbia Electric Co., Ltd., Vancouver, B.C., and President, Pacific Coast Gas Association.

'It's Your Business,' by Sheldon Coleman, President, Coleman Co., Inc., Wichita, Kansas, and President of the Gas Appliance Manufacturing Association.

Meanwhile, a scenic tour of Lake Louise and luncheon at the Château Lake Louise had been organised for the ladies; and in the afternoon the golfing members participated in the Association's annual tournament.

Another interesting feature of the day was a spectacular attraction centred on the hotel outdoor swimming pool which can be maintained at a temperature of 112°F. by reason of

the local sulphur water springs—and this, when the surrounding snow-covered mountains tower above. A natural gas flare illuminated the pool while water sports were displayed by the members of the hotel staff who, it is worth remarking, number among them many university students from all over the Dominion and who vie with one another for the onerous posts of waitresses, elevator operators, bell boys, and shoeshine boys during their summer vacation. There was also a fashion show, and the golf prizes were presented.

On Wednesday, June 23, the morning session, under the Chairmanship of Mr. B. F. Willson, Assistant General Manager, Northwestern Utilities, Ltd., was devoted to a paper on 'Canada's Growing Economy and Energy Requirements,' by Dr. O. J. Firestone, Economic Adviser, Federal Department of Trade and Commerce, Ottawa, Ontario, and to a discussion on 'Alberta's Natural Gas for Canada and the United States,' under the Chairmanship of the Moderator, Mr. F. A. Brownie (President, Northwestern Utilities, Ltd., and President, Canadian Western Natural Gas Co., Ltd.). Participants were Ralph E. Davis, Engineer and Geologist, Houston, Texas, his theme being 'Gas Reserves'; J. N. McKinnon, Chairman, Alberta Petroleum and Natural Gas Conservation Board 'Functions and Jurisdiction of the Board'; Charles Hetherington, Vice-President, West Coast Transmission Co., Ltd., 'The Serving of British Columbia and the Pacific Northwest States with Natural Gas'; and Mr. N. E. Tanner, President, Trans-Canada Pipe Lines, Ltd., 'Trans-Canada's Plans for Serving Eastern Canada.'

Mr. Hetherington's subject was most topical since it had been reported, only a few days prior to the Convention, that the West Coast Transmission Company had not been granted the right to supply gas into the American North-West Pacific States; it had been granted to an American Company. However, the paper was given on the assumption that the original idea would prevail.

In the afternoon the Chair was taken by Mr. Yorath when the Report of the Nominating Committee and election of Officers and Executive Committee were dealt with. Mr. R. C. McPherson, General Manager, Canadian Natural Gas Company, Calgary, then took the Chair for the presentation of an able paper by Mr. A. E. Grauer, President of British Columbia Electric Co., Ltd., Vancouver, entitled 'You Can't Avoid Public Relations,' and one by Dr. Dwight Palmer, Manager-Owner, Dwight Palmer and Associates, Management Consultants, Los Angeles, California, on 'Management Development.'

To wind up the Convention a most interesting and informative film, 'Man Against Mountain,' was projected, showing the construction of the trans-mountain pipeline. This was by courtesy of the Comstock Construction Co., Ltd.

In the evening Mr. Yorath held a reception, followed by the Annual Dinner at which the principal speaker was Mr. F. C. Smith, Director of Houston Natural Gas Co., Boston, and Director of the American Gas Association.

At noon on June 24 terminated a most informative and generously hospitable meeting. The organisation throughout was excellent and great credit is due to all the organisers, including, not least, the President's wife, who supervised and arranged the Ladies Section. It must be borne in mind that many of the members and visitors had travelled up to 2,500 miles to attend the meeting from various parts of Canada and the U.S.A.

R.T.R.

A GUIDE TO INDUSTRIAL TYNESIDE

The Newcastle and Gateshead Chamber of Commerce has rendered a worthwhile service to industry in general and enhanced Tyneside's industrial status in particular by its publication of *Tyneside Products: A Guide to Industrial Tyneside.* It is a tastefully produced book of 132 quarto pages in profuse colour, edited and compiled by B. H. Hopper and published on behalf of the Chamber by the Bemrose Publicity Co., Ltd. Colonel E. G. Angus, C.B.E., President of the Chamber, points out in an opening message that it is more than seven years since the Chamber produced a volume descriptive of local trade and commerce. Since then there have been many changes in the commercial and industrial character of Tyneside typical of the post-war years, but among those changes, enterprise, initiative, and progress have been as predominant as ever. Millions of pounds have been and are being spent on modernising existing plant and creating new.

Mr. D. Heathcoat Amory, Minister of State, Board of Trade, contributes a foreword in which he mentions that copies are going to be sent to chambers of commerce, United Kingdom commercial representatives, and importing firms throughout the world. 'We must show the world the best that Britain can do,' he says, 'and the book will do much to stimulate interest in our manufactures and to encourage buyers to look to us for their needs.' There is also a message from Alderman W. McKeag, Lord Mayor of Newcastle.

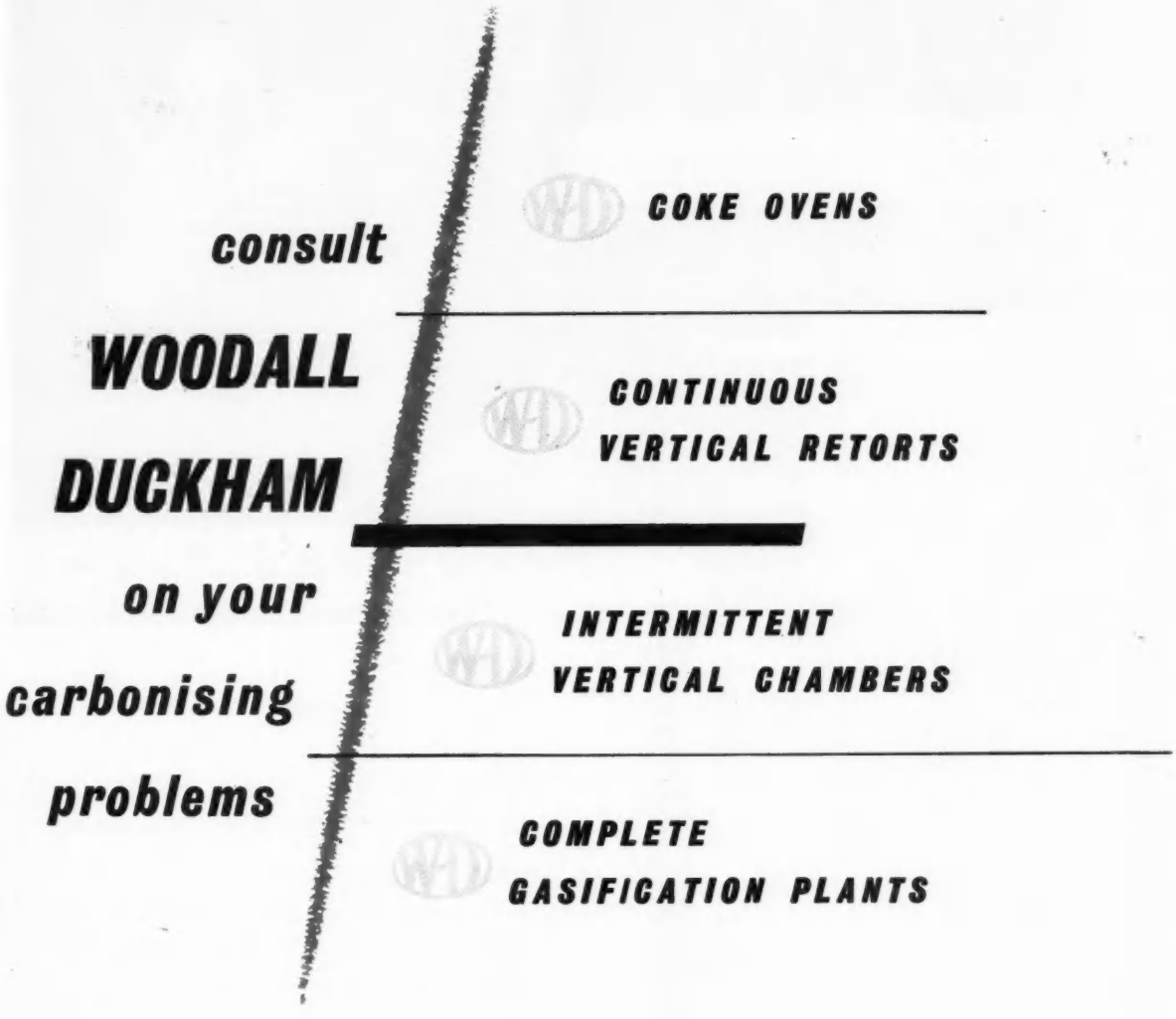
Newcastle and Gateshead can boast of one of the oldest chambers of commerce in the United Kingdom; actually the first was founded in 1783, and the Newcastle and Gateshead Chamber dates from 1815, and a full account is given of the services offered by the Chamber. The main industries of the region are coal mining, iron and steel manufacture, shipbuilding, and chemicals, and among the large and enterprising undertakings are many which serve the gas industry in many ways. In turn, the gas industry has a vital part to play in the life and industry of Tyneside, and it was through the courtesy of the Northern Gas Board that the publishers sent us a copy of the book.

Industrial Tyneside has from its earliest days been well served by its gas undertakings, formerly the Newcastle and Gateshead Gas Company, and the smaller but probably little less efficient undertakings based on the other Tyneside towns, and latterly the Newcastle Division of the Northern Gas Board, now operating a gas grid involving some 2,000 miles of main and supplied from six large gasworks and four large coke oven plants. A chapter on coal and power points out that the present scale of operation of the Newcastle Division entails the carbonisation of the equivalent of 1,200,000 tons of coal per annum and the distribution to nearly 300,000 consumers of 16,000 mill. cu.ft. of town gas, with a peak daily output of 68 mill. cu.ft.

This annual gas consumption ranks third highest in the British Isles and is exceeded only by London and Birmingham. Residuals in the form of coke, tar, sulphate of ammonia, and benzole are produced and marketed, tar and benzole being separately processed at the central by-products works at St. Anthonys. Industrial gas utilisation on Tyneside developed to a remarkable extent in the slump period from 1930 onwards, the consumption rising from 18% of the total gas output in 1930 to 40% in 1939, and to 53% in the peak war period. A slight recession in demand after 1944 due to the cessation of armament production was rapidly absorbed by post-war industrial development and there has followed a steady increase in industrial consumption which, at some 8,000 mill. cu.ft. per year, is half as much again as the peak war consumption and more than twice the 1939 figure.

The recent completion of an extensive scheme for the reconstruction of the Howdon works, together with additional plant at other works and the prospect of the intake of appreciably larger quantities of coke oven gas, make available adequate supplies for a continuation of the steady rate of expansion of demand. The achievement also of a connecting link across the River Tyne at the eastern end of the mains system by means of two 12 in. diameter mains laid through the cyclist and pedestrian sections of the new tunnel between Howdon and Jarrow has greatly improved the flexibility of the distribution network covering Tyneside.

The use of gas in Tyneside shipyards includes the heating of large frame and plate furnaces, rivet heating, plate cutting, pipe flanging, and brazing. General engineering demands cover the melting of iron and non-ferrous metals, ladle heating, core drying, the heating of billets for forging, extruding and rolling, and a wide range of heat treatment processes, including annealing and stress relieving, and new techniques for flame hardening and gas carburising. Glass, paint and varnish manufacture, galvanising, chemical production, spring making, soap manufacture, tin printing, and pottery manufacture are representative of the many and diverse trades and processes which rely on gas and its application to a great variety of heating, drying, and melting processes. Steam raising, too, is essential to many industrial and commercial premises in the area. Gas is just as vital in many forms of lighter industry—in the food trades for example, in cafés, restaurants, and hotels, and from the small home bakery to the mass production biscuit, bread, cake, and confectionery units. The Board is to be complimented on its full page advertising display in colour, emphasising that the experience of the staff of its industrial heating department is at the service of Tyneside industry.



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Hints to Producers and Distributors on

INCREASING THE POPULARITY OF COKE

By MISS C. A. WOOSTER,
Deputy Manager, Coke Department, Gas Council (retired).

Some months ago the London and Counties Coke Sales Circle ran a competition in which members were invited to submit papers on 'What steps should producers and distributors of coke take, individually or collectively, to increase the popularity of Coke?' First prize was awarded to Mr. R. F. Knowlden, Coke Officer, Bristol Sub-Division, South Western Gas Board, whose paper was published in the 'Journal'. At the recent annual meeting of the Circle Miss C. A. Wooster, who retired last year from the position of Deputy Manager of the Coke Department of the Gas Council and Secretary of the Coke Committee, and who had formerly served as Secretary of the National Federation of Gas Coke Associations and General Secretary of the London and Counties Coke Association, was invited to express her views on the papers submitted in the competition.

Miss Wooster said that in general the papers showed that coke was regarded as a product which required sales effort, and she was encouraged that there was less talk of coke being a 'cinderella' fuel. It could now be claimed that it had prestige; it had taken its place among the recognised fuels and made a contribution to the life of the community. As one writer said, coke had been raised in status from Cinderella to a Princess. And what was more the Circle could claim the credit for getting it there.

In a number of cases it was impossible to tell from reading the paper whether it had been written by someone from a gas board or from a distributor company. That, she thought, spoke well for the work being done by the Circle—nothing but good could arise from meetings between all those responsible for selling coke.

Advertising

Advertising was included in practically all the papers and all the writers seemed to think there should be more advertising for coke. As usual on the subject of advertising, there were a number of different views, but they fell into two main categories, namely, some recommended a large national campaign to advertise coke in every kind of media —one instanced the campaign for nutty slack—another mentioned the campaigns for soap powders; and there were two writers who took a more modified view. One wrote: 'Publicity should follow two lines, namely for the benefit of architects, local authorities and so forth, and the other aimed at helping the consumers to understand their problems.' The other writer expressed it a little differently but on the same lines: 'There should be education of the public by means of advertisements in the public Press, lectures, films, and demonstrations.'

Advertising, continued Miss Wooster, has an important place in the life of our community. Given enough money and a good advertising agent it is possible to make the public buy almost anything once, but the customer's repeat order, of course, depends on the product. For that reason it usually follows that an advertised product is a good product. In the ordinary course when an advertising campaign is started the manufacturer first of all sees that stocks are adequate to meet all demands and he watches closely that the sales organisation ties up with the advertising side, so that as demand is stepped up by the advertising there are the stocks available to meet the demand.

The coke campaigns suggested by some of the writers would cost £150,000 to £200,000 to launch and then, of course, any advertising is wasted unless there is continuity, which means that there must be a regular appropriation. As one writer said, calculated as pence per ton of coke sold that may not be much but even so, before recommending such an expenditure, one wants to be sure that it will pay dividends on an appropriate scale.

Coke can be hard or soft, large or small, and speaking generally one needs the right appliance in which to use it so that coke is not a commodity which can be bought simply by giving an order for coke as such, or it should not be sold that way. Either the consumer has to amplify his request by saying 'same as last time,' or 'I want it to use on a coke fire, a boiler, or whatever it may be'; or the supplier's records have to show what each consumer wants. It would be unwise to encourage the public to burn coke without some knowledge of its functions. To launch a coke campaign one could probably accumulate a stock but as coke is a by-product its manufacture cannot be controlled beyond certain limits so that a large advertising campaign could easily overrun the stocks and, again because coke is a by-product, create a demand which could not be satisfied continuously.

The 'Smoke Conscious' Public

I suggest that you are selling a solid smokeless fuel to a public which is already 'smoke' conscious; and by good fortune that consciousness has done more to help than a lot of advertising. It has broken the ground. You have a potential market already created which, if organised and satisfied, would absorb all the available coke for some time to come. There are already so many coke-burning appliances installed in the domestic market that, if you once get to the stage where you can say that 80% of them are burning coke regularly and are getting the right size and a consistent quality, you would have a stable coke market. The position is different on the industrial side, but there it is only first class salesmanship which will keep and develop that market, with perhaps some specialised advertising to a particular section of industry where a convincing story can be told. The commercial and quasi-domestic coke business is vulnerable but if the product, its price and your service, plus smokelessness, will not hold the business, it is doubtful if, in the long run, advertising would hold it. One could add too the complication of the availability of different sizes of coke which would be very difficult to fit into an advertising campaign.

Because coke is a by-product and because of the many types and characteristics of coke, a large scale national advertising campaign would be an embarrassment, but to popularise coke on a permanent basis and to retain and to build up stable markets, coke advertising needs to be directed towards specific aspects, and the two writers whose remarks have been quoted are on the right lines—'to educate the public how to use coke and to help the consumers to understand their problems'.

Simple Literature Wanted

There should be more publicity to educate the public on the merits of coke in specific ways and in a way which keeps pace with the availability of suitable cokes; and consumers having decided to use coke should be shown the best type to use and how to get the best out of the coke and the appliance. Also we should ask for far more simple literature—not technical stuff with all due respect to the technicians—but something interesting, informative, which can be read and understood by the average consumer, the consumer who is merely interested in warmth, comfort, etc., at a competitive price and does not care in the least what fuel he uses so long as he gets what he wants.

In some of the papers one detected a defensive attitude about gas publicity—in other words, large sums of money were spent on advertising gas and so there should be something similar for coke. Don't let us get on the defensive.

The two fuels are quite different and need quite a different sales technique.

Consistency of Product

The next subject mentioned in nearly all the papers was consistency. I would include with that quality, as indeed some of the writers did, and because I believe the two subjects go together. We could add, too, screening and grading. Little solid fuel sold today is good quality in the sense that we understand good quality. Coke, unfortunately, is no particular exception except that it is manufactured, which helps, and, very important, it is smokeless, although, I regret to say, not dustless.

We are told that there are long term plans afoot to improve the quality of the different fuels so far as it can be corrected. Indeed, with any commodity, if the producer does not produce the best possible at a competitive price, ultimately the goods are not sold. That is elementary, and so I feel that coke producers are bound in self defence to do all they can. Maybe more could and should be done about screening and grading as some of the writers suggested, but what can be done and how it can be done is somewhat outside our purview. You have to meet the consumer today, tomorrow, and the next day to sell the coke which is available and you have to keep the consumer satisfied with that coke if he is to continue to use coke. It is no good living in the clouds and thinking how nice it would be if there could be new gasworks or coke ovens to produce the ideal coke, whatever that is, because we all know that is impossible. Some writers thought the gas boards could get all the best coal they want!

One writer wrote: 'Much that is attributed to quality is really lack of understanding how to burn coke.' Considerable strides have been made towards consistency but the job is far from complete. In this one word we have the biggest answer to the subject of the competition because it could popularise coke as nothing else could and it is definitely a joint producer and distributor effort, and it is no good one or the other party trying to do it without the other. The fact that it is not easy adds to the spice of it.

The Sales Staff Must Know

I believe we should start with the producers' responsibility to let the sales staff know in reasonable detail what types of coke are available and where they can be made available. In other words, the sales staff must know what they have to sell and then the job is theirs. The types available may not be what you would like but that has to be faced because coke is a by-product. We have agreed that all coke is not good but we are seeking to see that every consumer has consistent deliveries of coke. Fortunately the consumer does not know as much about coke as you do and once he becomes accustomed to a particular type and understands its performance he will go along quite happily unless the apple cart is upset by a delivery of another kind, and particularly a better kind.

The producers' next job is to give the sales staff what they order within the limits mentioned because the order from the sales staff is based on known consumer requirements. To be quite specific, if a truck of horizontal nuts is ordered a truck of vertical is not necessarily the answer. If a truck of Twiddlededee coke is ordered, a truck of Twiddlededow coke is not a fulfilment of the order unless, of course, the cokes are reasonably interchangeable. That is a tall order for some producers and something one could not even hope for unless it was going to produce the desired effect at the other end which is to popularise coke and give satisfied coke consumers.

Then we pass to the other end of the line, where the coke is received. A proper sales organisation will be necessary there. A truck of coke arrives exactly as ordered and as required for specified orders. In the meantime, another order has come in, only a small one, and all very convenient because it is on the route where the lorry is to deliver this coke. There is one snag, this small order is not for the type of coke in the truck and so quite firmly it awaits the arrival of the right coke although it is going to be more costly to send it out specifically.

The next subject I have chosen is free samples. Several writers have advocated giving free samples of coke to new consumers. The word 'free' tends to get a little confused sometimes; something for nothing—free health scheme, free milk, coupons for free soap, etc., etc., when in fact anything free to one is paid for by another, and this applies to coke as much as anything else. In fact it applies very much to coke because a consumer would need at least 14 lb. to provide a fair trial and that in terms of money is a fair item to someone. If the salesman for one firm or board is to be allowed to give free samples all must be permitted to do so in a democratic world, so an intelligent consumer could live for quite a while on so-called free coke.

Free Samples? No!

Candidly, does the consumer value something he gets in this way? Writers were quite genuine in wanting to get consumers to try coke but I am endeavouring to put the other side and to suggest that it can cheapen a commodity and that the results are not worth the cost. I believe that first class salesmanship does so much more. One writer suggested free installations of all coke appliances. It could be much more costly, of course, but I would prefer that if it was a workable proposition, but I feel there are so many snags that it is not worth pursuing.

Stocking and Summer Prices

Coke stocking was mentioned by several writers and from a number of different aspects. The objective in all the writers' minds is to relieve the load on winter deliveries. It is impossible with present facilities to deliver in the winter all the coke used in the winter and, if so, something has to be done to spread the load. The idea that consumers should take more coke into stock in the summer is not new, and from the distributors' point of view, and even the producers', it is an ideal answer. But why should the consumer buy coke for your convenience when he does not want it? He is not asked to do that for anything else. One point about coke which may not be relevant to other commodities is that if it is not stocked at the place where it is to be consumed it has to be or should be rescreened before it is delivered to the consumer in the winter. When that is not done quality complaints are likely to arise.

The only solution to this problem suggested by the writers is consumers' summer prices for coke, except one who suggested a lower price to distributors. A summer price to consumers has the advantage of shifting some of the responsibility from the distributor to the consumer. The writers did not elaborate how they thought this could be achieved. As I see it, it requires some different method of selling coke to the distributor. At present the distributor's class determines the rate at which he buys all his coke and thereafter the distributor sells the coke to the different types of consumers according to the nature of his business. And that method makes it very difficult to treat any one particular section of consumers differently from another.

The idea of giving a lower price to distributors to encourage them to stock is another way but the space available for stocking by distributors is relatively small. Coming back to the subject of the competition, I believe our recommendation should be that there is a real job of work for producers and distributors jointly to see how coke stocking in the summer can be made so effective that it will produce more satisfied customers in the winter.

Coke Appliances

The sales staff can give important guidance on the practical side of coke appliance development. I gained two impressions from the papers which may or may not be correct, namely, (1) that the sales staffs do not get as much information as they should on new coke appliances; and (b) that sufficient use is not made of the machinery of the Circle to give the manufacturers the benefit of what the consumer is known to think about coke appliances. The greatest single contribution made to better coke marketing during the last few years has been the improvement in coke burning appliances; and that contribution has been successful and has paid dividends. The range of tested appliances now is considerable and should suit all tastes.

The swing from independent coke boilers to open fires with back boilers is a notable feature and many salesmen could give some interesting side lights on that. I have wondered to what extent that swing has been consumer choice

as against local authority choice—the latter because of the comparative cost.

Training of personnel is next on the list and is mentioned by a number of writers. Some of them gave good ideas as to the course such training might follow. The coke salesman must understand the different types of coke and their performances; he must know the appliances, their functions and their capacity; and know something about the installation of the appliances. That is the bare minimum of the knowledge required to sell coke, and I would agree with some of the writers who enlarge on the results of this lack of knowledge and how it can prejudice the sales of coke. Service to the consumer must not be a talking point but a reality and that needs trained staff.

Training facilities are available for producer sales staff; and the courses arranged by Mr. Greenhill for the London and Counties Coke Distributors' Association are meeting a need on the distributor side in a very real way, particularly as they are being taken to the staff.

Finally one of the most novel suggestions is that the industry should 'arrange for a van to circulate around agricultural areas where gas is not available and offer to cook the dinner.' That is a good idea and worthy of further and more serious thought.

Gas in FRANCE

'Ashton' *concludes, from p. 351 of last week's issue, his review of the papers presented at the June meeting of the Association Technique de l'Industrie du Gaz en France.*

PAINTING GASHOLDERS

By R. Marpon,

President of the Assoc. Tech. of Paints and Varnishes

The author sets out the general composition of paints used for this purpose and discusses their theoretical and practical behaviour. He illustrates the action of water upon certain compounds. He discusses the influence of external factors on painting—conditions of application, the nature of the water and of the plates—connecting defects observed with probable causes.

His conclusion is that the intrinsic quality of paints is insufficient to guarantee good results. Collaboration is necessary between the paint manufacturer and the painter.

DETECTION OF LEAKAGE IN TRANSMISSION LINES

By Roger Legrand and Michel-Ange Minerbe,

Engineers to the Research Department, Gaz de France.

The apparatus consists of a generator-amplifier and a millivoltmeter with a very large internal resistance. The several methods in use and practical results are described and tabulated.

REDUCING-AMPLIFIER APPARATUS FOR CONTROL OF GAS FLOW

By Yves Laurent and Marcel Tétart,

Following the study, undertaken in 1948 by MM. Bazille and Delbourg, of pressure-reducing apparatus with amplifier, the authors have experimented with a new type of double venturi with a special profile given to the interior venturi. Normal restricted-area types of apparatus (diaphragm, venturi, tuyère) were rejected on account of the loss of pressure produced and of space occupied.

In one design, used at Gennevilliers, for a 700mm (about 28 in.) dia. main, the external venturi tapers to 400mm in 505mm, the interior begins on the same line with the external diameter 200mm to 90.5 while the outside cone converges to the same apex as the external venturi. A simple formula is derived mathematically connecting differential pressure with rate of flow with a nomograph of corrections for varying characteristics of the gas.

PLASTICS IN DISTRIBUTION

By Jean Prévot,

Research Engineer in the Research Department of Gaz de France.

The object of the paper is to collect in a single document the results of laboratory tests on tubes of various plastic materials with a view to their use in the distribution of gas. The first part gives general information on the constitution of plastics. The fabrication of tubes in chloride of polyvinyl is treated in detail as an example. The following chapter is devoted to the physical and chemical properties of the principal materials proposed for the fabrication of tubes—chloride of polyvinyl, polyethylene, acetobutyrrate of cellulose, stratified polyester. The third chapter contains, after a brief résumé of previous tests, the author's tests on gas tightness, strength, bending and failure under progressive load, resistance to shock, superficial hardness, workability, etc.

This study shows that certain well-defined plastics possess qualities likely to make them useful in this connection, particularly for branch services. Risks arising from their fragility at low temperatures and their sensitivity to benzole seem to be worth taking provided that economies can be made in comparison with the employment of the classic materials.

CONTROL OF METERS

By Marcel Martin and Jean Lefebvre.

The paper describes the L.M. meter tester for the examination of consumers' gas meters. The checking *in situ* with a standard meter is a long operation, which may be inconvenient to the consumer and which gives very imperfect results for considerable expenditure. The authors have sought to put into the hands of the meter-reader a robust instrument, requiring no particular care in manipulation, practically free from variation with pressure. The L.M. is a precision tool which passes, for a given position of the 'throttle,' constant quantities of gas whatever the pressure. The gas, having passed through the meter to be tested, passes then through the 'tester' at the exit of which it is burned. The only figure to be taken is that of the time of passage of the gas, from which the volume is deducted from a pre-determined graduation. An accuracy of ± 1.5% is claimed.

HEATING BY RADIANT PANELS

By Antoine de Jerphanion,

Director, Industrial Applications, Gaz de France.

This paper has been prepared at the request of members of the Commission of Applications of the A.T.G.; it seeks to present a 'synthesis' of existing knowledge of the subject. On the basis of experimental data based on a study of a number of relatively large installations it seeks to define the limits of the application of panel heating and define the principles of its utilisation and installation.

The radiators used fall into two classes, the 'dark body' type consisting of a metal plate heated behind by gas flames and insulated to limit radiation at the back, the temperature of the radiating face varying from 225° to 450°C.; the luminous type consisting either of refractory elements heated by gas burners, or a burner with the orifice constituted by a refractory plate pierced by a large number of holes giving a finely divided flame, rapidly raising the temperature of the perforated plate. The temperatures of this type are of the order of 900°C.

The examples examined include several churches, a street in Lille, an outside terrace on the Eiffel Tower, the

Bourse de Commerce at Dijon. Illustrations of these are given, but a large number of other examples are cited.

Radiant panels are of interest where with a relatively low thermal and structural cost a result generally satisfactory can be obtained rather with a relative comfort than a real comfort leading to inacceptable costs. Results of some 30 installations are available for reference.

INDUSTRIAL USES OF INFRA-RED

By Ernest Peyrichou,

Engineer to the Service of Domestic and Industrial Uses of Gas. Environs of Paris.

Generally these take the forms of stoves or ovens with reflectors directing the radiation on to the objects to be treated. They have been applied to paint drying, drying and dessication, biscuits, vulcanisation of latex, metallurgy, laundry and dyeing. In the Banlieue of Paris there were in service in 1953 some 680 ovens of all kinds with a nominal consumption of 5,000m³ (say, 175,000 cu.ft.) of gas per hour; of these 55, representing 15% of the total consumption, used the infra-red technique. Several examples are described and illustrated. Results are so satisfactory that considerable expansion in this direction is anticipated.

IMPROVEMENTS IN INFRA-RED RADIATORS

By Anélien Doncesco,

Research Engineer, Physics Section, Gaz de France.

These appliances are of the 'dark body' type referred to in M. Jerphanion's paper on Radiant Panels. The portion of the heat absorbed by the insulation of the back of the panel, and which by reason of its great thermal inertia attains temperature equilibrium only slowly, increasing the time required to reach full operation, must be considered as lost heat, limiting the efficiency of these appliances to about 60%. In the new designs described in this paper the heat radiated has been increased by using a portion of the air heated by convection as secondary air, by reducing the time of heating up by lightening the cast iron heated plate, and especially by replacing the insulation by a chamber in which circulates a portion of the air used for combustion.

CHIMNEY VENTILATORS

By Victor Louis,

Hon. Director, Gaz de France.

The paper reports tests on the operation of static ventilators (taking products of combustion from gas appliances) working, either alone or associated with others, in a grouped chimney stack. The results reported relate to one design and are not exactly transferable to other types. They are in two parts, the first on the ventilator itself alone and on the group, the second on the influence of the wind at the summit of the ventilator and as affected by a vertical wall or an inclined roof. It is hoped that these tests may lead to a standardisation of static ventilators for this purpose.

MEASUREMENT OF HUMIDITY.

By Gérard Le Flem,

Research Engineer, Industrial Physics Section, Gaz de France.

The knowledge of the humidity of a gaseous atmosphere or of the air itself is indispensable in certain industries—metallurgy, textiles, air conditioning, etc. The paper describes apparatus based on the fact that the thermic conductibility of a gas varies with its moisture content, utilising the measure of variations in electric resistance of a metallic element, the equilibrium temperature of which depends on the composition of the humid atmosphere. The two principal elements are a thermostat to maintain a constant temperature in the apparatus and a Wheatstone bridge to measure by comparison with a given moisture content in the same atmosphere. The apparatus is standardised by observations on the same atmosphere dry. Its use in practice is recommended on grounds of cost, simplicity and rapidity of measurement, precision, applicability over a wide field.

CEMENTATION OF STEEL BY NATURAL GAS

By Jacques Coq,

Research Engineer, Physical Service, Gaz de France.

The problem is to obtain by the incomplete combustion of natural gas with air a mixture effective in the cementation of steel. After discussing the methods in use, the author shows the importance of the materials comprising the walls of the oven; quartz, iron, nickel-chrome steel give very different results. The use of catalysts increases these differences. The utilisation of quartz is simple, but gives results inferior to those of nickel. Finely divided nickel gives results perfect from the point of view of cementation, but gives rise to deposits of carbon in the catalyser; this can be obviated by the use of pumice-stone as a support for the nickel, the quantity of which can then be reduced.

It is pointed out that the controlled atmospheres indispensable to this technique should open up new and profitable fields to the gas industry in heat treatment.

HANDBOOK FOR WELDING DESIGN

The Institute of Welding has nearly completed the compilation of a *Handbook for Welding Design* which will be published in three volumes. Volume 1 will contain sections covering the choice of materials for welded construction, the properties of rolled and built-up sections, the classification of electrodes, types and design of welded joints, typical assemblies and factors which influence the cost of welding. The second volume will consist of typical worked examples of products drawn from many branches of the engineering industry including machine structures, ship details, pressure vessels and chemical plant, storage tanks and gasholders, railway rolling stock, and other engineering products. Volume 3 will be devoted entirely to structural work and will include descriptions of the various methods of analysis, their application to the design of a number of structures, and a large range of structural details such as portal frame knee-joints, stanchion bases, beam to column connections, etc., together with certain tabular information concerning beams and rigid frames taken from *Handbook for Welded Structural Steelwork*.

The *Handbook* is being compiled by committees composed of experts on the various aspects of the subject, each committee being responsible for one section of the work. Those interested are invited to write to the Institute so that details may be sent to them when the *Handbook* becomes available.

BRITISH STANDARDS 1954 YEAR BOOK

If ready access to vital information be one of the canons of efficient business organisation, the 1954 edition of *British Standards Year book* will prove as indispensable as its many predecessors to all engaged in industry, commerce, and scientific research. The *Yearbook* lists no fewer than 2,500 British Standards current at March 31, 1954, and gives a brief description of the subject matter of each. A comprehensive index simplifies reference.

The usual information on the membership of the Institution's General Council, Divisional Councils, and Industry Standards Committees is given, together with the names of representatives on the main special committees and advisory committees. Particulars of the work in hand of all the industry standards committees are also given. British Standards under which the Institution's certification trade marks are used are listed under the headings electrical; building; plastics; bedding and furniture; personal safety; and miscellaneous.

Containing over 500 pages and attractively produced, the *Yearbook* is essential to all whose work demands that they keep up-to-date with the increasing momentum of practical standardisation and simplification. Copies of the *Yearbook* may be obtained from the British Standards Institution, British Standards House, 2 Park Street, London, W.1. The cost is 12s. 6d. per copy.

Written Contributions to Institution of Gas Engineers Discussions

Natural Gas and the Italian Gas Industry

By Dott. Ing. A. BOHM

Mr. P. Wertheimer (London) wrote:—Experience in converting domestic appliances from town gas to natural gas and to liquefied petroleum gases suggests that this can be comparatively simple, subject to certain reservations, with Continental types for Continental usage. It may not always be so simple to do so with domestic appliances for other requirements and to other standards. It may be important to consider and decide to what extent modifications may be permitted in standards (for example, pressure and combustion) or performance (for example, heat output per burner) when converting an appliance. Separate standards may be desirable, of progressive stringency, for three classifications: (a) appliances already in use, (b) those in stock or in course of production, and (c) new designs.

The **Author,** in a general reply, wrote:—Mr. F. M. Birks draws attention to the important subject of interchangeability of gases, and it is interesting to note that the method of assessment proposed by Gaz de France is based on criteria that are largely arbitrary. It follows from this, therefore, that where assessment is based on less rigid criteria a gas might be judged to be interchangeable even though it would be rejected by the official method of assessment.

Coal gas and air-methane mixtures containing large quantities of the latter were expected to cause serious trouble in gasholders and pipe lines, but after some years of experience the author is of opinion that such fears have not been substantiated.

The causes determining the increase of unaccounted-for gas are many, as was explained in the paper itself. While there is no direct proof of gasket shrinkage or of the drying of hemp joints when using gaseous mixtures of the kind now being discussed, there is no doubt that at Lodi the amount of unaccounted-for gas was kept within reasonable limits by distributing saturated gas. So far as is known, experience at Lourdes is decisive on the shrinkage of rubber gaskets, when using gas stripped of benzole. Lead-tipped rubber gaskets are seldom used in Italy.

Though the difference between 42 and 285 therms per consumer is not wholly ascribable to an increase in the heating load, it is certainly mostly so. In fact, a remarkable increase (about 100%) has been noted even in summer consumption at Lodi.

It is true, as Mr. Birks suggests, that, in the case of Lodi and also of other towns near the natural gas recovery centres, the gas wells themselves act substantially as gasholders; consequently, the distribution load factor is correctly stated to assume a predominantly hourly rather than daily or annual significance.

Mr. Birks' remark about the cost of gas for both cooking and heating is also correct, and the price differentials to consumers are dictated by purely commercial considerations. Cooking by gas is so practically advantageous to the consumer as to outstrip easily the competition offered by its rivals for the cooking load; hence, it is possible to command a better return for the load. Conversely, the heating load has to be won in the face of normal competitive conditions, and it is advantageous to the gas undertaking to quote an attractively low price to secure it.

In other words, where there is a combination of low price rates and a low forecast of gas demand for heating, it would be difficult, in the face of keen competition, to improve the sale of gas for heating, for the heating load would be debited with a disproportionate amount of overhead charges.

Mr. G. E. Currier has questioned the means used to increase supply pressure. In the case of air-methane mixtures in which the supply pressure of the natural gas is too low, the cost of compressing methane instead of air involves the consumption of four or five times more power, on account of the efficiency of injectors being notoriously low.

The competition of fuel oil, coke, and wood is more keenly felt than that of electricity in Italy, and it should be noted that the area of Lodi provided a virgin market for gas heating, but not for other uses of gas.

In Italy, gas is sold by the cubic metre, so that the adoption of a flat price per therm shows, in the distribution of straight natural gas, an apparently enormous increase in overheads. The increase of 170% is to be considered on a volume basis, which does not alter the cost per therm.

Mr. J. H. Dyde's question concerning thermal efficiencies is best dealt with by an article contributed to the Italian review *Gas* (February, 1954) by Dr. P. Bonetti, Manager of the Verona Gasworks. A plant discussed by Dr. Bonetti belongs to the Municipality of Verona, and has an output of about 1.89 mill. cu.ft. a day. The gas has a calorific value of 444 B.Th.U. per cu.ft.; hydrogen content, 33.5%. A thermal balance of about 90% includes process heating, but not the electric power, which is not excessive, used by the plant. Fuller details are given in the article mentioned.

Efforts were made to produce as moist a gas as possible, raising the dew-point, with the object of preventing the drying of gaskets. Often it is enough in small plants, in order to assure a sufficiency of moisture, to see that the gas circulates in the non-oil-filmed gasholder. Many American plants have resorted to saturating, a process at which Mr. Dyde himself hints. In Italy, close attention has been paid to the possibility of raising calorific value by stages, and it is likely that the more important plants will be modified to achieve this.

The author agrees with the remarks written by Mr. P. Wertheimer on limits, modes, and modifications that may be permitted in standards. There are not yet in Italy any standards governing the conversion of domestic appliances.

Civil Defence and the Gas Industry

By W. N. MARSHALL

In a contribution to the discussion on the paper on 'Civil Defence and the Gas Industry' presented by Mr. W. N. Marshall, **Mr. H. R. Hems** (Birmingham), wrote:—In the event of serious deterioration in international relations, or the lamentable event of another war, no doubt the gas industry would be expected, as in 1939-45, not only to take every measure to maintain gas supply in as serviceable condition as possible under the circumstances, to meet both domestic and industrial requirements, as Mr. Marshall indicates, but also to extend its experience into the maintenance of war production materials in the factories of the country.

In 'Gas in Industry at War' (Institution 1945), I was privileged to survey the contribution of the gas industry in this respect throughout the 1939-45 outbreak, and in the introduction to the paper, attention was drawn to the services which had been rendered by many of the staffs engaged on industrial work in collaboration with the then existing Government emergency service organisation. The reference to this was, of necessity, very brief, but records are still in existence and I feel that any plans made to meet a future emergency should contain details as complete as possible of action that would certainly have to be taken on similar lines. Such action would be vital to the maintenance of industrial war production.

Mr. R. Prince (Chief Engineer, South Eastern Gas Board) wrote:—Mr. Marshall has performed a useful service by the presentation of this paper. He has brought together in a concise and readable form the basic information required by those on whom rests the responsibility of civil defence planning in the gas industry. He sets out the forms of hostile attack to which we may be subjected in any future war, and discusses means by which they may be met. It is hoped that this paper will stimulate greater interest and help to remove the *laissez faire* attitude of those who appear to think that enemy attack in any case will be on such a scale that means of minimising damage and destruction are unlikely to be effective.

The author raises a great many problems which would repay discussion, but this is not the time or place to get down to detail. I would, however, raise three points:

(1) Reference is made to the cutting off of mains around the circumference of a severely bombed area. How are the mains to be located when no buildings are left as landmarks, nor roadways visible due to the anticipated depth of debris? Location' by recording the position of mains in relation to the national grid may doubtless be a partial answer, but is there a reliable 'mains finder' available which can be used effec-

tively and quickly under the conditions envisaged? It must be remembered that the gas repair squads will not have the field to themselves; other public utilities will be equally anxious to repair their services, rescue teams and fire brigades will be at work and it seems likely that pandemonium will reign to a chorus of bulldozers, pneumatic drills, vehicles, etc.

(2) The author refers to the value of close co-operation with the civil defence authorities at all levels and with other public utilities. This can be confirmed and particularly the worth of lectures given by gas technicians to the various civil defence units, which are much appreciated. When we come to combined exercies and studies, however, I would plead for greater simplification; those responsible for planning these are frequently so anxious to cover all the services which will be brought into play that too little time can be allotted to each, with the result that exercises become too sketchy and unrealistic. An exercise involving perhaps the public utilities, fire brigade and police only would, in my view, be more helpful than one that also attempts to draw in at the same time the hospital services, feeding the homeless, welfare, etc.

(3) The author makes only passing reference to rescue parties. A number of rescue vehicles, equipped to the standard of the Home Office and manned by trained squads, can be a very real asset in meeting peacetime hazards in gasworks.

Centralised Control of a Gas Grid

By F. G. SYMON

Mr. L. J. Clark, B.E.M. (Development Engineer, North Thames), wrote: The design and operational planning of a gas transmission grid provides a useful technical and economic exercise usually capable of solution without having to make too many assumptions and without having to resort to higher mathematics. Mr. Symon's paper is an interesting record of the way in which such a problem has been worked out and subsequently put into effect.

The paper would have been even more valuable if Mr. Symon had given more information on the basic data and economics on which the scheme was worked out. In the first place, the comparative costs of gas manufacture at the various works prior to inter-linking would have provided the economic perspective against which to assess the cost of the transmission mains and control systems.

For given quantities of gas to be transmitted over known distances, the pumping costs decline as the size of main and associated capital charges increase, and if a graph be plotted of total costs—*i.e.*, main charges plus pumping costs against main diameter, a U-shaped curve is obtained in which excessive main charges become predominant at one end of the curve and excessive pumping charges at the other. The trough of the curve in the lowest cost region usually shows a substantial range of main size over which there is no significant difference in overall costs, after including the pumping charges. Within this range of economic main size, it is usual to adopt the larger size so that as the future load builds up the conditions may remain near the point of maximum economy.

From calculations I have made, it would appear from the figures quoted by Mr. Symon that the system based on Aldershot, while economic at present, errs on the side of the small-sized main and heavier pumping costs. It would appear that if the future load rises appreciably the pumping charges might become excessive and the operating conditions will move further away from the point of maximum economy. I should have thought that for the quantities and distances involved it should not be necessary to use pumping pressures of more than 3 lb. to 5 lb. per sq. in., at the present time. I have also found some difficulty in reconciling the actual pumping pressures quoted in the paper with the quantities and distances, and I wonder whether there are still some bottlenecks in the system due to the formation of rust deposits.

North Thames Practice

Mr. Symon has rightly stressed the necessity of maintaining a high load factor on the transmission system so that pumping pressures might be kept as low as possible and a minimum amount of work done on the gas, and he describes the way this is achieved by planned operation of the holders. The North Thames gas grid operates on the same general lines as this, although there is no automatic and remote control equipment for the district holders. In general, the holder stocks are controlled on the basis of a time schedule with overriding instructions as and when necessary from a centralised control room which receives hourly records of all holder stocks. This system operates very well, and during the cold spell in February, 1954, when the send-out from Beckton was 133.5 mill. cu.ft. in the day, the maximum hour's send-out was only 7½% higher than the daily average.

Apart from load variations within the day, the North Thames Gas Board is very much concerned with the seasonal variation of gas demand, which reduces the load factor on the system and cannot be compensated for by the method of operating the holders. I should welcome more information from Mr. Symon on this point.

The graphical schedules for working the hourly holder stocks are particularly interesting. This method would, however, not be very suitable for North Thames conditions due to the fall off in gas demand at the week-ends. This means that the holder stocks have to be worked down gradually during the week in order to accommodate surplus gas at the week-end.

It is surprising that Mr. Symon refers to the use of steam-driven compressors exhausting to atmosphere, and the operating costs quoted would appear to be some three times as high as the cost of fuel to a diesel engine developing a corresponding amount of power. Even allowing for heavier maintenance charges on diesel engines (usually less than 20% of the fuel cost), the advantages offered are considerable. If there is any particular reason why steam should be used and it is not possible to use all the exhaust steam for process purposes, it is suggested that a substantial saving could be made by installing steam condensers. In general, the North Thames Gas Board has found the economies offered by oil engines are such that it frequently pays to scrap older machinery even though it may not have reached the end of its useful life.

Mr. R. Hayes (Barrow-in-Furness) wrote: The paper is interesting, particularly as we are about to put into commission a similar remote supervisory control system in the Furness District of the Northern Group of the North Western Gas Board. It is assumed that the control rooms are sited at the respective production stations, in view of the fact that it has been found practicable to man the panels for 16 hours per day—*i.e.*, from 6 a.m. to 10 p.m., instead of 24 hours per day which one would have thought necessary had they been sited elsewhere. This he has been able to do in spite of the fact that storage at one station is as low as a quarter of the maximum day's output.

It is suggested—and I should appreciate the author's views on this—that remotely to control small districts of, say, 2,000 to 3,000 consumers, which have adequate storage of at least 12 hours per maximum day, the input to the stations could be regulated at a constant rate over the 24 hours with the holders taking care of peak loads, it being assumed that storage in each case is 100% effective. That being the case, if the panels are sited at the production station, with shift personnel always in attendance to hear alarms, and to call out senior distributing personnel in cases of emergency, the efficient and economic manning of the panels could possibly be reduced to, say, a few hours per day once the optimum flow rates had been determined for each district. It is considered that the necessity to change these conditions should only arise periodically. Although I am a distribution engineer, I believe that this method is the most economical provided that full control of the movement of gas is left in the hands of the distribution engineer.

The alternative, of course, is for the siting of the control room to be at some distributing centre with the consequent manning of the panels 24 hours per day. This system is ideal for a large distributing organisation, but is considered rather elaborate for the remote control of a number of small holder stations fed from one production station.

Use of Magnetic Valves

One other interesting point in the paper is the use of the magnetic valve to control the opening and closing of the volumetric governor in addition to the cam-operated control switch which varies the flow in steps of approximately 2,000 cu.ft. per hour. The former method fully opens and closes the volumetric governor at one push of the button, while the latter method would take approximately five minutes to do the same operation: the cam moves 9° per push of the button, and as the full travel of the cam is 225°, it takes 25 steps to open the governor fully or to close it. I should like to know if the condition or state of the magnetic valve is indicated on the control panel, so that the controller knows whether the valve is in the open or closed position at any one time.

I should also like to know if the holder high limit alarm sounds every time the volumetric governor is closed by the action of the holder high limit cut-off gear—*i.e.*, when the holder is at, say, 15% from full. If that is so, it means that the holder high limit alarm is going to sound two or three times per day. I should like to see the alarm set a little higher than this position so that it would sound only when a fault developed in the holder gear or through gas backing up in a leaking non-return valve through the holder outlet main into holder as could happen in some holder station installations.

Mr. Symon's reply will be published in a later issue.

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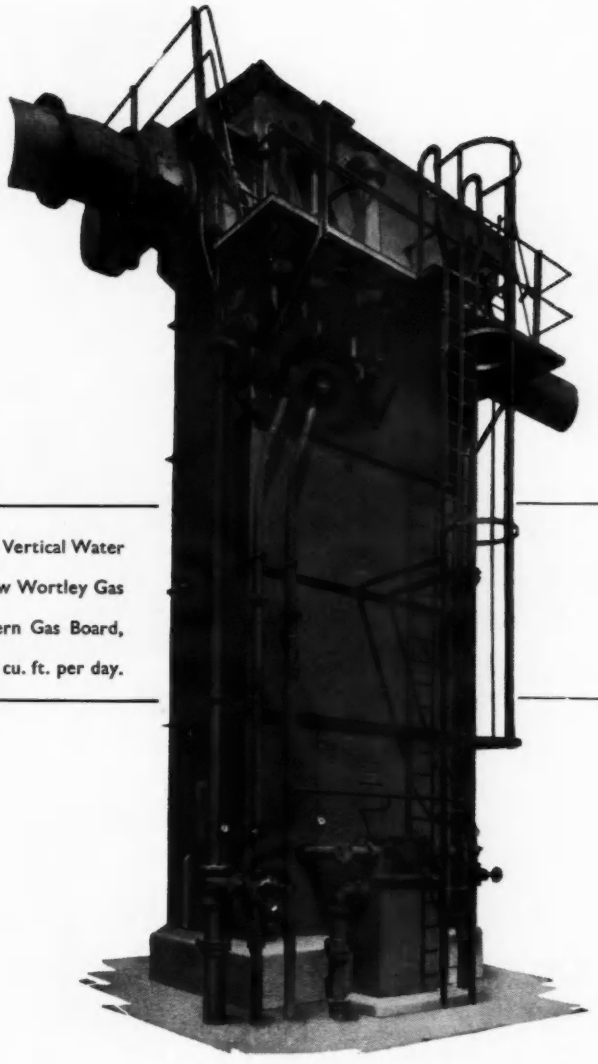

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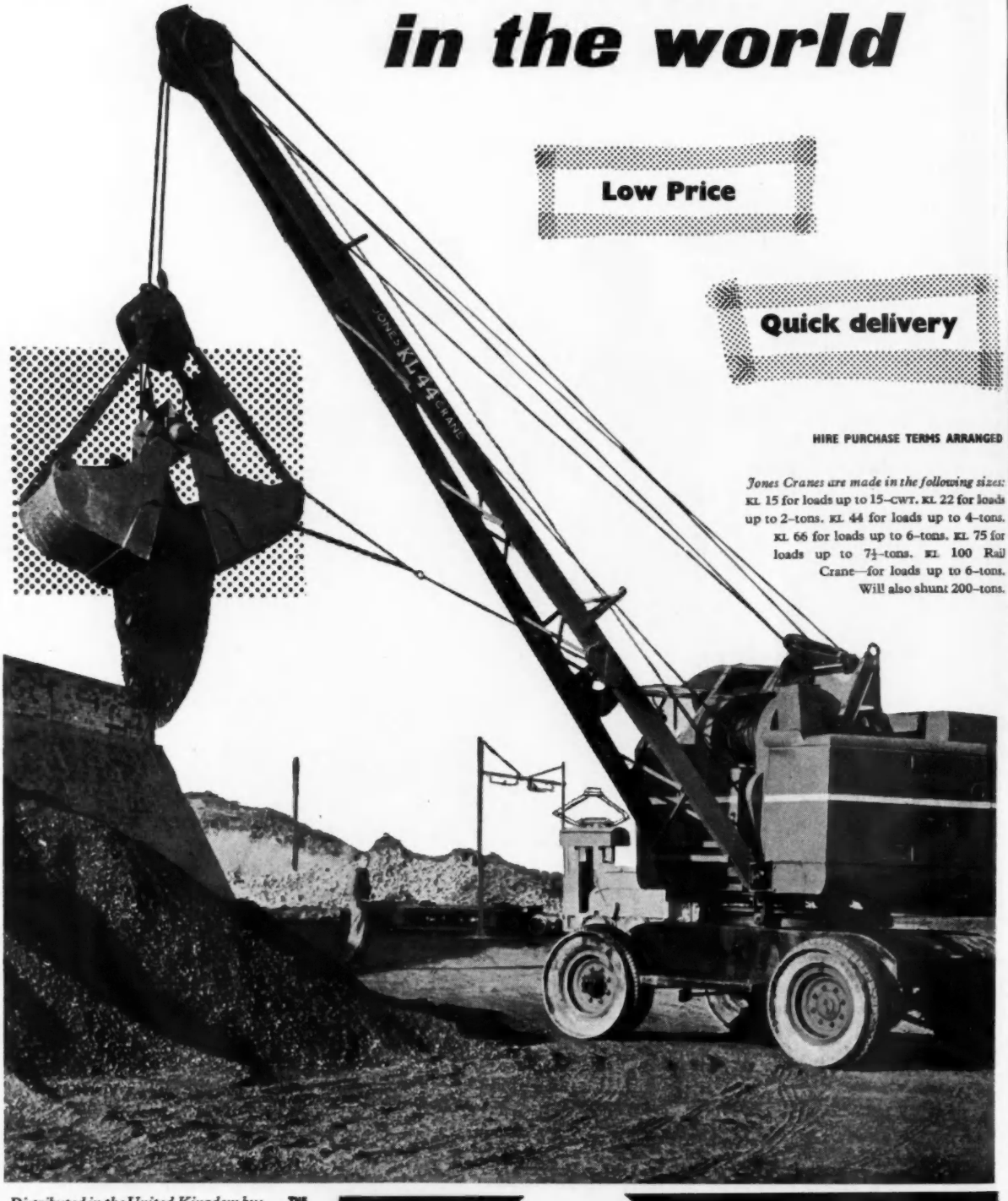

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'SERAPHIM' is Brought into Action

Appleby-Frodingham Extensions Inaugurated at Scunthorpe

The largest sinter plant in the world, and the two largest blast furnaces in Europe, are now in operation at the Scunthorpe Ironworks of the Appleby-Frodingham Steel Co. The project—a scheme involving £15 mill.—was brought to fruition last month. On July 29, Sir Archibald Forbes, Chairman of the Iron and Steel Board, started-up the sinter plant and lighted the second of the two blast furnaces. It is expected that these furnaces will increase the works output of pig iron by rather more than 600,000 tons per annum. When the removal of some out-of-date plant has been completed, the total tonnage will be in the region of 1,400,000 a year. The Appleby-Frodingham Steel Co. is now the largest integrated steelworks in the British Commonwealth; and it is believed that the new furnaces will be the first in the world to operate on a 100% sinter burden. It is expected that operating costs will thereby be greatly reduced. The new plant is the first stage in the long-term plan for raw materials, which provides for a far bigger proportion of iron than was formerly used in steel-making processes. The whole is the culmination of research, expansion, and modernisation by the Company, which, since the war, has spent over £26 mill. on new plant.

The picture above shows the blast furnace plant from the south east. On the left is the coke grinding plant, showing the rod mills. Below is an imposing photograph of the sinter materials storage building, showing the shuttle conveyors and the Frodingham and Northampton coke stock bays.

Plant extensions and new methods have resulted in a steady increase in the demand for molten iron by the steel furnaces. Appleby-Frodingham now produces practically all the basic iron required by its associates in the United Steel Co.; these changes have increased iron requirements by some 250,000 tons per year. Moreover, the quality of the local ironstone is deteriorating. The new plant is designed to produce more iron from poorer ores.

Today the whole of the Appleby-Frodingham iron production is concentrated on four blast furnaces.

The two 350-ton furnaces in the Frodingham melting shop are fully instrumented and fitted with automatic linkage between roof temperature and fuel flow, fuel flow and chimney damper control, and air/fuel ratio control. Originally the furnaces were fired with mixed blast furnace gas and coke oven gas. With increased coke oven gas production excess coke oven gas was available in 1953. It was then decided to fire certain steel furnaces with coke oven gas, and the method developed used this fuel and creosote pitch in a thermal ratio of about 2 : 1. This method of firing is giving important increases in output compared with the former mixture of coke oven gas and blast furnace gas. In 1953, ingot production from the two furnaces exceeded 300,000 tons. The coke oven batteries are of the Koppers type and comprise 132 ovens. Total production of blast furnace coke by the Company is now averaging 11,650 tons per week, this being approximately half the total requirement of the plant. Total consumption of coke is not expected to increase materially with the increased output

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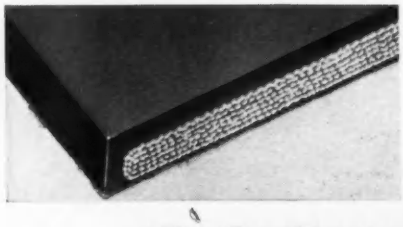

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because of the important reduction in coke requirement per ton of iron.

An interesting feature of the extensions is the erection of a central refractory crushing and preparation plant. This plant will introduce important savings in labour. It can be adequately supervised by one technician whose main duty will be to ensure correct mixing and grinding of refractories required by the whole steelworks.

Coke Research

Experience with the 22 ft. and 25 ft. blast furnaces demonstrated that coke for these furnaces must give a figure of at least 85 for the 1½ in. shatter test. To achieve this on the ordinary mixture of South Yorkshire coals is a matter of some difficulty. Much research was put in hand in this connection. Pilot ovens were built at each of the Company's coking plants. The Appleby-Frodingham coke ovens department alone has made more than 600 tests in its experimental ovens in its efforts to find improved blends and carbonising methods.

The coke oven plant was increased from 66 to 132 ovens in 1952. Arising from experimental work more extensive grinding arrangements were installed so that the degree of crushing was increased from 78% to 85% below ⅛ in. This improved grinding, together with the addition of small amounts—about 5%—of low volatile Welsh coal, resulted in the shatter strength of the coke increasing to 88 to 90 on the 1½ in. shatter test. Incidentally, the Welsh coal used is, by itself, completely non-coking, but the experimental and research work was so conclusive that no hesitation was felt in transferring small scale work to full scale.

With coke from Appleby-Frodingham and the associated plants at Orgreave and Brookhouse, the Company should be virtually self-supporting in regard to this vital material.

Several improvements have been made in the layout of the coke pulverising plant, and the Ernest Newell pulverisers, which crush the coke to ⅛ in., are of larger size. The coke breeze is discharged from hopper-bottomed wagons on two rail tracks into a ferro-concrete bunker from which it is fed by a vibrating feeder onto a belt conveyor system. This discharges on to screens placed above storage bins, which feed the mills via further vibrating feeders. Belt conveyors take the breeze to the material storage building.

Gas Cleaning Plant

The new gas cleaning plant consists of the conventional dust catcher, and McKee type washers feeding into a common 'semi-clean' gas header, whence the gas passes in parallel through five electrostatic precipitators into the clean gas header. The middle washer of the three is standby for either blast furnace. The cleaning plant has been designed to handle 6 mill. cu.ft. per hour from each furnace and to clean the gas to a dust concentration not exceeding 0.005 grains per cu.ft. when the concentration in the dirty gas entering the washers is 7 grains per cu.ft.

In the present scheme four boilers are included for providing steam for the turbo-blowers. They have a maximum gas consumption of nearly 5 mill. cu.ft. per hour. With gas firing the boilers operate on full automatic control. The second essential service to be supplied with blast furnace gas comprises the McKee stoves. The gas consumption for heating the blast may reach a maximum of 2½ mill. cu.ft. per hour. Air/gas ratio control is fitted as a matter of course. The remaining service is the provision of a gas supply to the sinter plant. In this case blast furnace gas is enriched with coke oven gas.

Why 'Seraphim'?

The project was named 'Seraphim'—the initial letters of 'south extensions,' Ross Engineers, Ltd. (crushing plant), Ashmore, Benson, Pease & Co. (blast furnace construction), Parolle Electric Co. (turbo-blowers and boilers), Head, Wrightson & Co., Ltd. (sinter plant), and Idris Miles, the Christian names of Appleby-Frodingham's Chief Design Engineer, Mr. Kemp.

Cannock Plan Obstacle

Part of a £250,000 scheme for enlarging Cannock gasworks may be jeopardised as a result of the refusal of two Cannock magistrates to issue a certificate for the closing of part of a local road.

An official of the West Midlands Gas Board said that if Girton Road, which runs between two sections of the gasworks, were not closed some modifications of the scheme might cause added expense.

Cannock Urban Council, which in February passed a formal resolution, subject to magisterial approval, closing part of the road had plans in hand for construction of a footpath to link a nearby 'prefab' estate with the enclosed part of Girton Road.

It is understood the Council is to consider an alternative method of securing the closure of the road.

Use of part of the road between the two sections of the gasworks will inevitably be so much increased by the enlarged undertaking that its continuance as a public highway will be considered impractical.

Simplified Tax Tables

Business managers, accountants, and others who have to deal with the intricacies of P.A.Y.E. and other aspects of taxation will welcome *Whillans's Tax Tables and Ready Reckoner*, 1954-55, published by Butterworth and Co. (Publishers) Ltd., at 5s. with reductions for quantities. Compiled by George Whillans, a Fellow of the Institute of Bankers, Fellow of the Institute of Taxation, and Fellow of the Royal Economic Society, its 12 pages, printed as before on good strong paper to withstand hard wear in constant use, contains grossing up charts at 9s. in the pound; tax charts for 1954-55 showing at a glance the effects of tax at 2s. 6d., 3s., 4s. 6d., 6s. 6d., 7s., and 9s. in the pound; tables of tax rates and reliefs; 'free of tax' annuities; surtax rates; national insurance contributions and benefits; rates of estate duty; P.A.Y.E. codes; profits tax information; a two-ninths table; and a calendar which shows the numbers of days from and to the beginning and end of the fiscal year ending March 31 and the tax year ending April 5.

Visit to Gothic Works

The 49th meeting of the North Thames Gas Consultative Council was held on July 30 at the offices of R. and A. Main Ltd., Edmonton.

Prior to the meeting members were entertained to lunch by R. and A. Main, Ltd., and after the meeting members were shown round Gothic Works by Mr. C. Marley and members of the staff. At the conclusion of the visit a unanimous expression of thanks was accorded to Mr. Marley, his co-directors, and staff for making the visit to interesting.

The Chairman (Councillor E. Bayliss) welcomed Mr. E. J. C. Dixon, Assistant Secretary, Ministry of Fuel and Power, who had been invited to attend the meeting, and explained that Mr. Dixon's attendance had no official significance other than his general interest in the work of gas consultative councils.

A Rochford consumer had complained in February of harsh treatment by the Board concerning the collection of arrears due in connection with the hire-purchase of a water heater. The complaint was then adjudged to be without foundation. A further letter had now been received complaining that when the water heater was removed, owing to non-payment of arrears, the fitter caused flooding in the kitchen.

The complaint had been referred to the Board, who reported that after full investigation it did not admit the allegations of disturbance and flooding.

Mr. W. S. Lamprey, St. Johns Wood, enquired about the ownership of 'return money' taken from the prepayment gas meter supplying the apartments occupied by him. He had occupied the flat (which was furnished) since September last. The gas supply was by prepayment meter and there was a gas cooker and gas fire installed. Until the end of May he did not know anything about collections from the meter, but then a new meter collector called, emptied the meter and returned the surplus cash to each individual tenant including Mrs. Lamprey. The 'return money' was immediately re-claimed from the tenants by the landlord's wife. Mr. Lamprey wanted to know to whom the 'return money' belonged.

The matter was referred to the Board, who reported that the owners of the house (and the Board's registered consumers) first took supplies of gas in 1936. The greater part of the house is let as flatlets on 'let furnished' tenancies. There are seven main prepayment meters, for which the collecting cards bear the name of the landlord and are endorsed to the effect that the return money is to be given to his wife; this arrangement has been in force since 1936. There are three appliances in the house on hire from the Board in the name of the landlord and the rental for these is taken from the 'return money' from the meter to which each appliance is connected; if the 'return money' is insufficient, the balance is paid by the landlord's wife.

The Board had not been able to ascertain the contractual relationship that existed between the landlords and their tenants. In the absence of knowledge it had, like its predecessors the Gas Light and Coke Company, had no option but to accept the position that the gas was supplied to the instructions of the landlords, to whom the Board looked to discharge the rent of the appliances fixed in the house and any other obligations in respect of the supply. The precise legal relationship as between the Board, the landlords, and Mr. Lamprey could in fact be determined only by the court.

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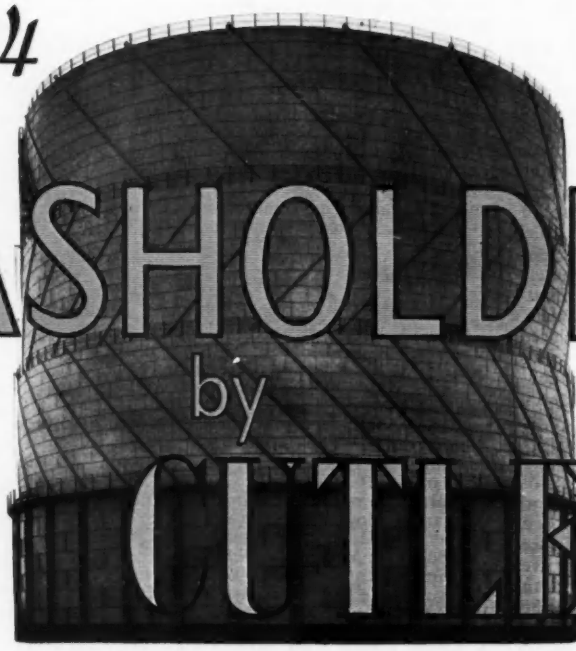

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New Scottish Fuel Service

The National Industrial Fuel Efficiency Service is to launch a campaign in Scotland to publicise the scope of the new body and its readiness to assist industrial fuel users. This new Scottish Committee takes over from the Scottish Fuel Research Committee and has used the summer to reorganise—although basic function and personnel remain as with the older service. A summary of services and costs has been prepared for interested industrialists and is available at 145 St. Vincent Street, Glasgow. Many of the services are free, others are on a fee basis, as in the past.

South Western Salesmen

Following re-organisation within the South Western Gas Board and the dissolving of the Northern and Southern Divisions, a newly constituted Salesmen's Circle has been formed, representative of the whole area. To operate the newly constituted Circle in time for the forthcoming session, members of the former executive committees have agreed to accept office for the first year.

The following are the officials: *Chairman:* A. E. Marshall (Plymouth District Manager Plymouth/Cornwall Division). *Vice-Chairman:* M. R. Webb (Commercial Assistant, Cheltenham Division). *Hon. Secretary:* H. Beacham (Commercial Assistant, Weston/Taunton Division).

In view of the distances involved in travelling, it has been agreed that for the first year all meetings will be held at Taunton, with meetings in October, November, February, March, and the annual general meeting in April.

Coke Circle Visits Reading

Through the courtesy of the Southern Gas Board, over 80 members of the London and Counties Coke Sales Circle recently made an all day visit to Reading. The party assembled at the Reading undertaking offices where they were welcomed by the Divisional General Manager, Mr. F. G. Symon, and by the Works Manager, Mr. D. L. Rumble, and divided into two groups.

In the morning one group visited Huntley and Palmer's biscuit factory and were interested in the whole process of biscuit manufacture, which they were able to see from the point when the dough is delivered to the first machine, to the point where the tins of biscuits are loaded on to trucks at the firm's private railway siding.

The other group visited Reading gasworks, and in addition to seeing the normal gas and coke-making processes, they were also shown extensive plant reconstruction at present taking place at the works.

The parties merged soon after midday and were entertained to luncheon by the Southern Gas Board at Grosvenor House, Caversham. After luncheon, members took the opportunity of looking round the hotel's delightful Rose Garden before dividing into two groups again for the afternoon visits.

Members who were at Huntley and Palmer's factory in the morning went to Reading gasworks, and the remainder visited Robert Cort's works and foundry, and were interested in the various processes displayed.

Tea was provided for each party at the conclusion of an enjoyable and successful day.

Heating and Ventilating

The Institution of Heating and Ventilating Engineers has arranged to hold a special meeting on September 14, when Mr. John K. M. Pryke, B.SC.(ENG.), M.I.H.V.E., A.M.I.C.E., consulting engineer, of New York, will present his paper on 'Current American Practice in Heating, Ventilating and Air Conditioning.' The meeting will be held in the Lecture Hall of the Institution of Mechanical Engineers, 1, Birdcage Walk, at 6.0 p.m.

The paper will give a general background of the building construction industry in the U.S.A., together with a description of the various regulations, codes, etc., which have to be met. The second section of the paper dealing with heating systems gives a summary of the trend in heating system design during the last ten years. A description of design procedures follows this, and then fuels in common use are dealt with. Materials and components and descriptions of the most usual types of heating systems used follows.

The ventilation section gives a description of design procedures and component equipment in use. The final section dealing with air conditioning covers the phenomenal growth of air conditioning in the last ten years, gives an outline description of design procedures and component equipment. Finally, a description of typical modern air conditioning systems, as presently being installed, is given.

Domestic Smoke Campaign

The biggest concerted campaign so far in this country to deal with the problem of domestic smoke pollution is to be launched in the West Riding of Yorkshire this autumn. Forty-four county and municipal authorities are concerned, members of the West Riding Regional Smoke Abatement Committee, under whose auspices, jointly with the Yorkshire Smoke Abatement Society, the campaign is being held. The Solid Smokeless Fuels Federation is supporting the campaign which extends for over a month from the middle of September.

The campaign opens with a meeting at Leeds on September 14 at which representatives of all public bodies in the West Riding concerned with health, housing, etc., will consider and discuss means whereby the problem of smoke pollution can be dealt with under the particular conditions prevailing in the area. Local meetings will be held subsequently throughout the Riding, with film shows and talks by technologists working on the various problems involved. A mobile exhibition is being provided by the Solid Smokeless Fuels Federation, with demonstrators, showing modern domestic appliances for heating, cooking and hot water, designed to burn solid fuels which are smokeless and sootless. The exhibition will tour the leading towns of the West Riding to tie-up with the local meetings and discussion groups.

The question of creating smokeless zones, by successive stages as in the case of Manchester, or in new housing estates where a condition of tenancy is that smokeless fuels only are used, will be explained and discussed.

The De La Rue Cooker shown in the photograph of one of the six housecraft rooms equipped with modern appliances at the new Kidbrooke School on p. 346 of last week's 'JOURNAL' was not a G4, as stated in the caption; it was, in fact, a B6 large capacity cooker.

Family Records in the Industry

Family records of service with the gas industry were recently referred to by Mr. Michael Milne-Watson, Chairman of the North Thames Gas Board, when he presented long service awards to a further 28 of the Board's employees, each of whom had completed forty years service.

Almost every one of the recipients had father, brother or some other relative who had also worked in the industry. Among the 28 was Miss Emily Bristow, one of the first of her sex to have qualified for an award. She is a cook at the Board's premises at Goswell Road, Clerkenwell, and her family record of service is more than 200 years.

Surplus Gas for Pakistan

Mr. Thomas T. McCreath, Chairman, spoke at the 42nd annual general meeting of the Attock Oil Company of the overland importation of surplus dry gas to Pakistan from the 'deep zone' at Dhulian, India. He said that as a result of increased production from the deep zone there was now surplus dry gas over their requirements at the fields.

This surplus could be absorbed economically as fuel at their refinery and also by sale to other users of fuel at Rawalpindi. The Board had therefore decided to purchase and lay a new 60 miles pipeline for the transportation of this gas subject to the Pakistan Government agreeing to grant an import licence and the necessary exchange. 'Prior to the incoming of the deep zone at Dhulian we had no free gas of any consequence to handle,' he said.

Water Heaters for Guernsey

In a general programme to supply suitable accommodation for the varied population of Guernsey, the States of Guernsey planned to build a block of self-contained flats to house elderly couples and people with small families. It was decided to erect four three-storey buildings to provide 36 flats, the site of which was centred near the main town of St. Peter Port.

Price was important because it was necessary for these flats to be offered to the public at a reasonable rental. Three main services for heating were available —solid fuel, electricity and gas—and after consideration it was decided to provide one solid fuel fire, with an alternative of gas or electricity for cooking, but to install gas for water heating. The Thermain 15 storage heater was selected, as it was calculated that with this type of heater situated at a convenient position to both the bathroom and kitchen, a considerable reduction in the plumbing costs could be achieved, and a hot water service could be supplied to the average family for about 5s. per week.

The flats have now been occupied for some months, and the tenants are pleased with the facilities provided by the Thermain 15. Of the tenants 87% chose gas for cooking, and in many cases Main 291 and 290 cookers were installed.

Nu-Swift, Ltd., have received an order for their Chloro-Flash extinguishers for use in aircraft of the Royal Danish Air Force. Charged with the new, highly efficient, fire fighting chemical, chlorobromomethane, which, mixed with carbon dioxide, is held under constant pressure, Chloro-Flash extinguishers are particularly effective on extra-hazardous fires.

SAFE HANDLING OF LIQUIDS

Developed primarily for aircraft fuelling and servicing, the Avimo Mark III pipe coupling can also be used for the controlling of liquids in general, not forgetting gases, sludges and solids. Therefore it has many potential uses on a modern gasworks, where the safe handling of many kinds of liquids, inflammable, corrosive and dangerous, is a matter of considerable importance. This quick release, high pressure, convertible coupling, with self-sealing, self-locking, self-aligning, and non-spill features, has been designed to meet the general requirements of industry for a good quality coupling, with bayonet connections, screwed collar and standard or non-interchangeable connections, the non-interchangeable type being specially recommended where two or more couplings are in use and where it is essential to avoid connection to a wrong pipe line.

The metal parts are designed to withstand high pressures of 2,000 lb. per sq. in., and are of stainless steel. The seals are of synthetic rubber, chosen to resist the attacks of various liquids. Special attention has been given to the problems of application for use with corrosive and dangerous liquids, and the self-sealing valves in each half of the coupling are arranged to eliminate spill during engaging and disengaging. The quick action bayonet connection is designed to be self-locking.

The coupling is equally efficient with the flow in either direction. Components are interchangeable, so that valves may be supplied for converting straight-through units into self-sealing units; if required, one half of the coupling may be self-sealing while the other half is straight-through. Provided the liquid moves at the right velocity a high proportion of sludge and dirt can be passed through it, as in principle it is self-cleaning, thus ensuring minimum maintenance and repair.

Each unit is easily dismantled, the only special tool required being a peg spanner which fits into the diametrically opposed holes in the face of the valve. The coupling has been approved by the Air Registration Board for use on civil aircraft and is in use on the 'Comet' and 'Britannia' at present with pressures exceeding 50 lb. per sq. in. Units have been made from ¼ in. to 8 in. internal diameter at the makers' works up to internal pressures of 1,500 lb. per sq. in. The coupling is made by Avimo, Ltd., Taunton, Somerset.

The two halves of the Avimo quick release, self-sealing, self-locking coupling and (on the right) the coupling connected.

Colonel V. C. Steer-Webster, O.B.E., Managing Director of Avimo, was responsible for many inventions during the last war, being one of the three technical experts who accompanied the Prime Minister, Sir (then Mr.) Winston Churchill, to the Quebec conference, for finalising the design of the Mulberry Harbour, for which he was responsible with the Americans.

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Trade News

Non-Metallic Pipe

Distribution of cold water supplies, gases, compressed air and chemical products can now be made through a new light-weight non-metallic pipe called Marleythene. The product, a thermoplastic tubing, has many advantages in the building, chemical, agricultural, dairy and food manufacturing industries. It can be used for handling chemicals in liquid form. The tube resists corrosion and erosion by all types of soil and water, and is unaffected by acids or alkalis, or contact with building material. Resilience makes it immune to frost no matter how severely or how often the water it contains is frozen. High thermal insulation qualities prevent condensation forming so readily as on metallic pipe, and the tubing transmits less noise and water hammer. It is a non-conductor of electricity and remains undamaged by stray electric currents. The tube softens with heat. This simplifies jointing and manipulation, but makes it unsuitable for use with hot water. But it may be used for waste pipes where internal pressure cannot be built up. Most of the jointing required can be made almost invisibly and the tube is easily installed. It has a long life without ageing.—*Marley Tile Co., Ltd., Riverhead, Sevenoaks.*

New Gas Heater

Announced this month by the Parkinson Stove Co., Ltd., is the new Paravector gas convector heater. Outstanding features of the new heater are economy and safety when left burning for long periods. Fixed in a room, hall or bathroom, or, in its portable version moved from one to another, the Paravector is designed to spread a steady level of heat throughout the whole

The Parkinson Paravector gas heater.

house. In multiple installations they are extremely suitable for the heating of public buildings. A single unit will heat up to 2,800 cu.ft. Consumption of the fixed model with three gas jets is 8,000 B.Th.U. per hour, while the 2-jet portable version consumes 6,000 B.Th.U. Burners are of the non-aerated fan-tail type with input controlled by a small constant pressure governor and fixed restrictor.

The burners, completely protected by the outer casing, are never in danger of blowing out in sudden draughts. The heater can be safely left burning in a room where children are playing and for the householder there is the added advantage that the Paravector is completely silent in operation. Standing to a height of approximately 30 in. with a depth of 11¼ in. and a width of 19 in., the casing is finished in an attractive hammered bronze with a grille of brown vitreous enamel.—*Parkinson Stove Co., Ltd., Stechford, Birmingham.*

Cutting Production Costs

A new overhead conveyor characterised by simplicity, lightness and low cost has been introduced by Geo. W. King. This chain conveyor, the 'P.C.P.,' is supplied in parts ready for erection by the purchaser. Components are ready drilled and patent hangers have swivel attachments that enable them to be fixed at any angle. The only tools needed for installing the 'P.C.P.' are a hacksaw, a spanner, and a clamp. The rated load of each trolley is 100 lb., but heavier loads can be carried if specifically required. We are informed that in one engineering works assembling small electric motors the new conveyor has made possible a 30% increase in production from the same floor area. As an indication of the flexibility of the conveyor, vertical bends of up to 90 degrees and horizontal bends normally 2 ft. radius but 1 ft. if necessary can be supplied.

An installation in the transformer winding department of A. Reyrolle & Co., Ltd., Hebburn, consists of two single 'P.C.P.' conveyors and an elevator; and it has enabled the firm to reorganise the department, thereby achieving a marked improvement in production from the same floor space and the same number of operatives.

Further particulars of the 'P.C.P.' conveyor and examples of its applications are given in an illustrated leaflet obtainable from *Geo. W. King, Ltd., Stevenage, Herts.*

Ascot's New Look

From the end of August three of the range of Ascot gas water heaters will wear a new look. The outer cases and draught diverters of the 709, 709B multipoints and SG32/1 bath water heater

New case of the Ascot 709.

have been redesigned. Each case now consists of a one-piece, deep drawn steel pressing with a lightly moulded front panel.

Not only does the change improve appearance, but also the housewife will now have a heater with an unbroken vitreous enamelled surface with no edges that are liable to chipping.

A one-piece case is slightly cheaper to make and is as easy to remove as the present front panel, but when it is removed the whole of the heating body and mechanisms are exposed from the front and both sides, facilitating repairs.

The heating bodies and gas and water sections are unaltered. On the 709 multipoint the positional markings are on the control knobs so that the cases can be used universally.

The 'P.C.P.' conveyor installation at the works of A. Reyrolle & Co., Ltd.

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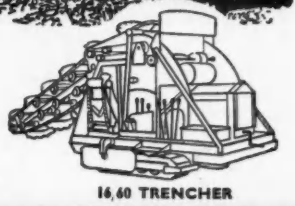

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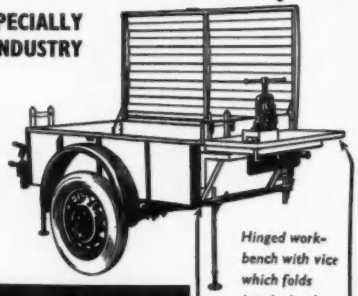

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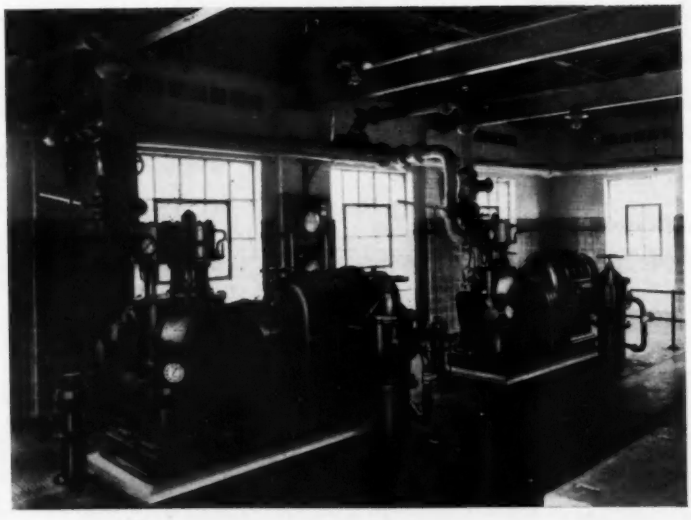

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Classified Advertisements: All small classified advertisements are charged at 1/9 per line (approx. 7 words)—minimum charge 10/6. A Box Number address occupies 2 lines, and a further 6d. is charged towards cost of postage on replies. Copy must be received by first post on Monday to ensure insertion in that week's Journal.

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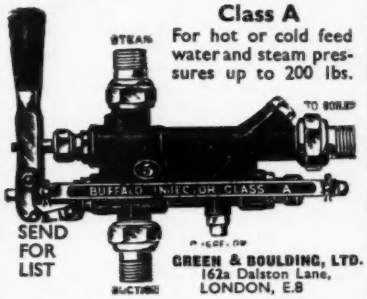

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The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

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APPLICATIONS are invited for the above pensionable appointment at a salary within Grade A.P.T. VI (£510 to £590 per annum).

Applicants must have had experience in the maintenance, operation and efficient working of all types of carbonising plants, and they will be required to carry out their duties under the direction of the Carbonising Superintendent.

Detailed applications giving the names of two referees should reach the General Manager, North Western Gas Board (Manchester Group), Town Hall, Manchester 2, within fourteen days.

DRAUGHTSMEN required experienced in Gas and Chemical Engineering. Pension Scheme. Five-day week and canteen facilities. Apply : W. C. Holmes and Co., Ltd., Turnbridge, Huddersfield.

WALES GAS BOARD

PONTYPOOL UNDERTAKING
CHARGEHAND MAINLAYER

APPLICATIONS are invited for the above appointment.

Applicants should have had a wide experience of modern mainlaying practice and be able to control labour and organise work on mainlaying schemes. Experience with high pressure supplies is essential and experience on steel mains an advantage.

A house will be available to rent in the new town of Cwmbran.

The appointment will be made within Intermediate Grade Scale II (Provincial 'A') £380/£425 per annum—Conditions II to apply.

Applications together with names of two referees to be forwarded to the undersigned so as to arrive not later than August 26, 1954.

A. FACER,
General Manager.

Gas Offices,
Hanbury Road,
Pontypool, Mon.

WALES GAS BOARD

SALES SUPERINTENDENT—
PONTYPOOL UNDERTAKING

APPLICATIONS are invited for the above appointment.

Candidates should be fully experienced in all aspects of commercial and domestic gas sales, including showroom management, publicity, estimating, sales campaigns, district canvassing, home service work and dealing with consumer complaints. The person appointed will be required to maintain satisfactory contacts with Local Authorities in the area.

The salary for the post will be in accordance with Grade A.P.T. VII (Provincial 'A') of the National Salary Scale for Gas Staffs, with placing according to experience and qualifications.

The post is pensionable and the successful candidate may be required to pass a medical examination.

Applications, stating age, particulars of training, qualifications and experience, together with the names of two referees should be addressed to the undersigned not later than Thursday, August 26, 1954.

A. FACER,
General Manager.

Gas Offices,
Hanbury Road,
Pontypool, Mon.

NORTHERN GAS BOARD

TEES-SIDE DIVISION
RENTALS SUPERINTENDENT

APPLICATIONS are invited for the above position in the Divisional Office, Middlesbrough. Applicants will be responsible for the Rental Section of 130,000 consumers mechanised on keyboard machines and an expanding punch card system. Experience in a Rental Office and good organising ability are essential.

Salary, A.P.T. IX (£635-£735).

The successful applicant will be subject to a medical examination and to participation in the Board's Superannuation Scheme.

Applications stating age, qualifications and experience, together with the names of two referees, should be addressed to the undersigned at the Northern Gas Board, Commercial Street, Middlesbrough, on or before August 26, 1954.

JOHN W. PALLISTER,
Divisional General Manager.

Gas Works,
Commercial Street,
Middlesbrough.
August 13, 1954

(*Classified advertisements continued on page* 430)

APPOINTMENTS VACANT (*ctd.*)

PRODUCTION ENGINEER required for Heavy Chemical Plant. S. West area. Practical experience in labour control and gas production essential. Starting salary between £800/£1,000 per annum. Good prospects, superannuation. Apply: No. 209, *Gas Journal*, 11, Bolt Court, Fleet Street, London, E.C.4.

NATIONALLY known N. West manufacturers large scale catering and cooking apparatus—gas, steam, etc.—require suitable person to take charge well established research—development—B.S.—Patent department. Salary commensurate qualifications and experience. Superannuation scheme and all modern consideration. Vacancy known to present staff. Apply with full history and all details in strict confidence to: No. 211, *Gas Journal*, 11, Bolt Court, Fleet Street, E.C.4.

WEST MIDLANDS GAS BOARD

WOLVERHAMPTON AND DISTRICT DIVISION
WOLVERHAMPTON DISTRICT
SHIFT ENGINEERS

CANDIDATES should have practical experience of the control and working of Woodall-Duckham Vertical Retorts and Automatic C.W.G. Plants, and be capable of supervising general Gas Works Plant operation. There are two vacancies.

The salary will be within Grade VII (£565-645 per annum) of the National Salary Scales for Gas Staffs.

The posts are pensionable and the successful candidates may be required to pass a medical examination.

Applications, stating age, qualifications and experience, together with details of present and previous appointments and the names of two referees, should be addressed to Mr. Stanley Jones, Divisional General Manager, West Midlands Gas Board, Wolverhampton and District Division, Kensington House, Bath Street, Dudley, to reach him not later than fifteen days after the appearance of this advertisement.

F. H. CURETON,
Secretary to the Board.

WEST MIDLANDS GAS BOARD

WOLVERHAMPTON AND DISTRICT DIVISION
SALES AND SERVICE SUPERINTENDENT—WOLVERHAMPTON DISTRICT

CANDIDATES will be responsible for the control of staff including showrooms and all work in connection with consumer service. The District comprises approximately 54,000 consumers covering domestic and commercial installations.

Applicants should preferably have experience in the control of a sales and service department of a comparable size, and possession of the Higher Grade Certificate (Supply) of the Institution of Gas Engineers will be an advantage.

The salary will be within Grade XI (£715-840 per annum) of the National Salary Scales for Gas Staffs.

The post is pensionable and the successful candidate may be required to pass a medical examination.

Applications, stating age, qualifications and experience, together with the names of two referees, should be addressed to Mr. Stanley Jones, Divisional General Manager, West Midlands Gas Board, Wolverhampton and District Division, Kensington House, Bath Street, Dudley, to reach him within fifteen days of the appearance of this advertisement.

F. H. CURETON,
Secretary to the Board.

FIRST CLASS Agencies wanted sales executive wide experience top qualifications valuable contacts. S. England, C.I. Apply: No. 210, *Gas Journal*, 11, Bolt Court, Fleet Street, London, E.C.4.

PORTSMOUTH, GOSPORT AND BOGNOR REGIS GAS UNDERTAKING

APPLICATIONS are invited from qualified FIRST CLASS GAS FITTERS only for vacancies in the area of the above Undertaking. Rates of pay will be in accordance with the Gas Fitters' National Classification Scheme, Provincial 'A' Undertakings, 3s. 9½d. per hour.

Housing accommodation is immediately available at a reasonable rental.

Applications should be addressed to The Engineer and General Manager at the address given below, not later than August 25, 1954.

H. M. LAWRENCE,
Engineer & General Manager.

Guildhall Square,
Portsmouth.

EASTERN GAS BOARD

CHELMSFORD GROUP
HALSTEAD & HEDINGHAM DISTRICTS

ONE first-class GAS FITTER and one SERVICE LAYER are urgently required to operate in the above Districts of the Chelmsford Group. Full J.I.C. rates of pay (Provisional 'B') and conditions of service. Person qualified to undertake both gas fitting and service laying would be considered. Single man preferred, as accommodation at the moment is difficult, although a house *may* become available at some future date.

Applications in writing, stating age, qualifications and enclosing *copies* of references should be addressed to F. N. Howes, Esq., Group Manager, Chelmsford Group, Gas Works, Chelmsford, Essex, to reach him not later than Saturday, August 21, 1954.

EASTERN GAS BOARD

WATFORD DIVISION
ASSISTANT WORKS ENGINEER—LUTON

APPLICATIONS are invited from suitable candidates between the ages of 28 and 34 for the above appointment. The Luton Works produces 1,500 millions of cubic feet of gas per annum in Horizontal and Continuous Vertical Retorts and Carburetted Water Gas Plants. The Assistant Works Engineer will be responsible to the Works Engineer for the efficient management of the Works and should be capable of taking control in the Works Engineer's absence.

The commencing salary will be within the Grades A.P.T. X or XI depending upon the age, capabilities and experience of the applicant. A house, at a reasonable rental, is available.

The successful applicant may be required to pass a medical examination and unless already subject to a Pension Scheme by virtue of the Gas (Pension Rights) Regulations, 1950, will be required, if eligible, to join the Board's Staff Pension Scheme within six months from taking up the appointment.

Applications stating age, qualifications, particulars of training and experience, together with the names of two referees should be sent to the undersigned not later than September 4, 1954.

T. C. BATTERSBY,
Divisional General Manager.

Radiant House,
Clarendon Road,
Watford, Herts.

SCOTTISH GAS BOARD

NORTHERN DIVISION
ASSISTANT DIVISIONAL CONTROLLER

APPLICATIONS are invited from fully qualified Gas Engineers for the above position.

Applicants should be fully experienced in production, distribution and sales and must have had administrative experience.

The salary scale applicable to the post is £1,025-1,275.

The successful applicant may be subject to a medical examination for the purpose of the Board's Staff Pension Scheme.

A house in Aberdeen will be available to rent.

Applications stating age, qualifications and experience, together with references should be submitted to the undersigned not later than Monday, August 23, 1954.

H. S. MILNE,
Divisional Controller.

50, Cotton Street,
Aberdeen.
July 29, 1954.

PRESSURE VESSELS
FOR THE GAS AND CHEMICAL INDUSTRIES
Welding in all Metals (Gas or Electric)
Welding Repairs
RICHMOND WELDING CO.
Richmond Road, BRADFORD
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UNION FOUNDRY, MANSFIELD, NOTTS.
ALL TYPES OF DISTRIBUTION MATERIAL IN STOCK
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'Phone: MANSFIELD 1256. *'Grams:* CASTINGS, MANSFIELD.
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UNDERPRESSURE CONNECTIONS
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CENTRAL ACTION DRILL STANDS
SERVICE CLEANSERS
TOOLS, ETC.

WALTER KING SERVICES—2

GAS SERVICE

"Gas Service" is the specialist magazine for the Sales and Service personnel of the Industry. It covers all aspects of gas service from the holder to the burner. In addition to sound editorials, news items and specially contributed articles, "Gas Service" also reports in the fullest possible manner the activities of the numerous Salesmen's Circles

Annual Subscription: Home and Empire, **12s.**; Foreign, **15s.**

FROM

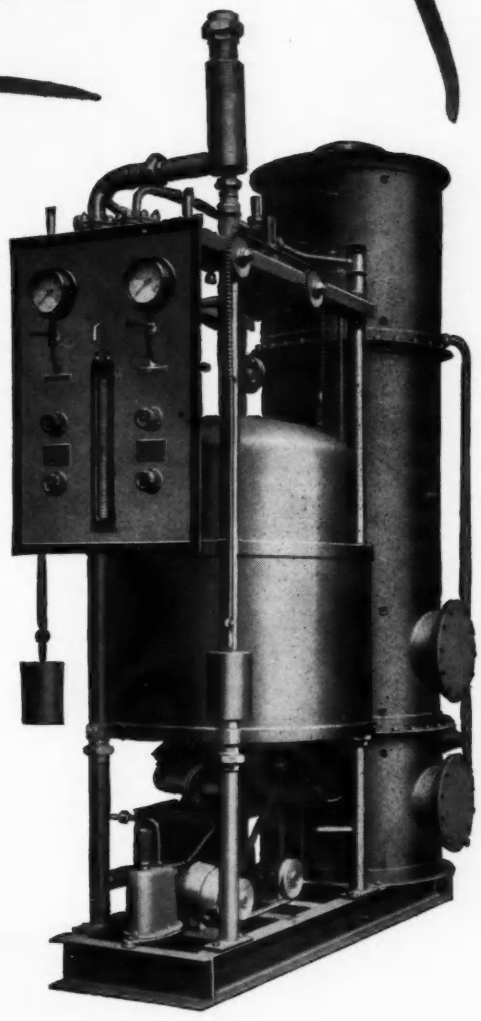
WALTER KING, LTD. 11, BOLT COURT, FLEET STREET, LONDON, E.C.4.

Your

MODERN GAS SUPPLY

at the touch of a button!

The Holmes-Mallet Plant illustrated delivers 6-8000 cu. ft. per hour of a mixture of butane and air which can be used for domestic or industrial purposes.



ADVANTAGES

- The plant is simple and can be supervised by one operative.
- It is arranged for manual push button stop and start **or** controlled automatically from holder.
- The calorific value of the mixture can be altered to suit requirements, and will be constant at any one setting.
- The plant occupies little space.
- It is designed to comply with Government Safety Regulations.

The HOLMES-MALLET BUTANE/AIR PLANT

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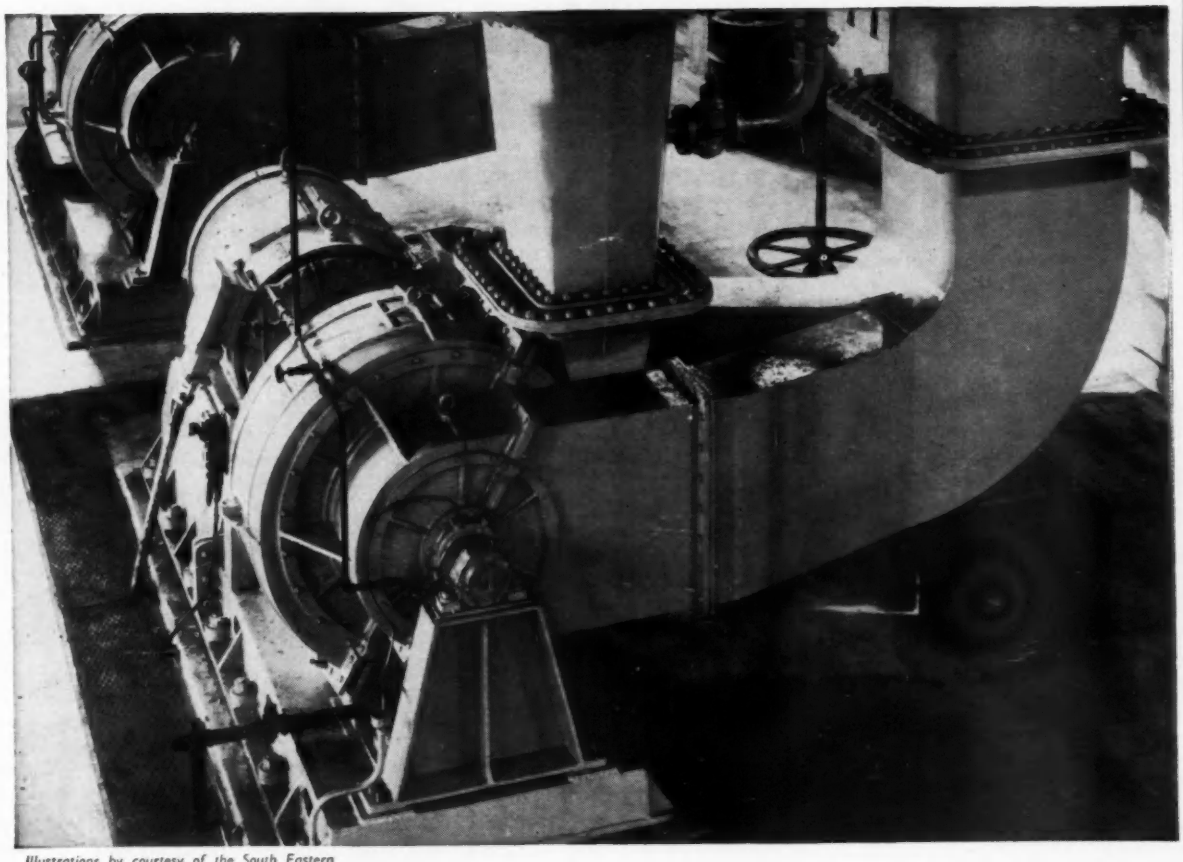

Illustrations by courtesy of the South Eastern Gas Board and Messrs. Humphreys & Glasgow Ltd.

Gas Boosting *

Part of an installation at the East Greenwich Gas Works for the supply of South London's gas are the "TORNADO" gas boosters illustrated above. Each is capable of shifting over a million cubic feet of producer gas an hour, and each was supplied with cast iron gas tight casings with detachable segments for easy servicing, stainless steel impeller and shaft, self aligning roller bearings and flexible couplings. One of the boosters was arranged for motor drive and the other for steam turbine.

*

LARGE ILLUSTRATION: *42" type 9 double width double inlet gas boosters.*

DUTY: 1,095,000 cu. ft. per hour producer gas at 104°F. saturated, giving 28" w.g. differential over inlet and outlet connections taking 138 H.P.

SMALL ILLUSTRATION: *40" type 15 air blowers.*

DUTY:	*Closed outlet*	*Delivery*
Air quantity	*nil*	*12830 c.f.m.*
Speed r.p.m.	*1480*	*1475*
Static pressure	*15.8" w.g.*	*13" w.g.*
Power absorbed	*13 B.H.P.*	*39 B.H.P.*

FAN ENGINEERING AND INDUSTRIAL GAS EQUIPMENT

We are manufacturing gas boosters which cover a range of from 5,000 to 1,500,000 cubic feet per hour, and if you are concerned with the movement of air or gas, ask us to send you Publication No. 5/7, a survey of the standard range of "TORNADO" high pressure blowing and exhausting fans.

Keith Blackman LIMITED

MILL MEAD ROAD, TOTTENHAM, LONDON, N.17

'Phone: Tottenham 4522 (twelve lines). 'Grams: "Keithblac, Norphone, London."

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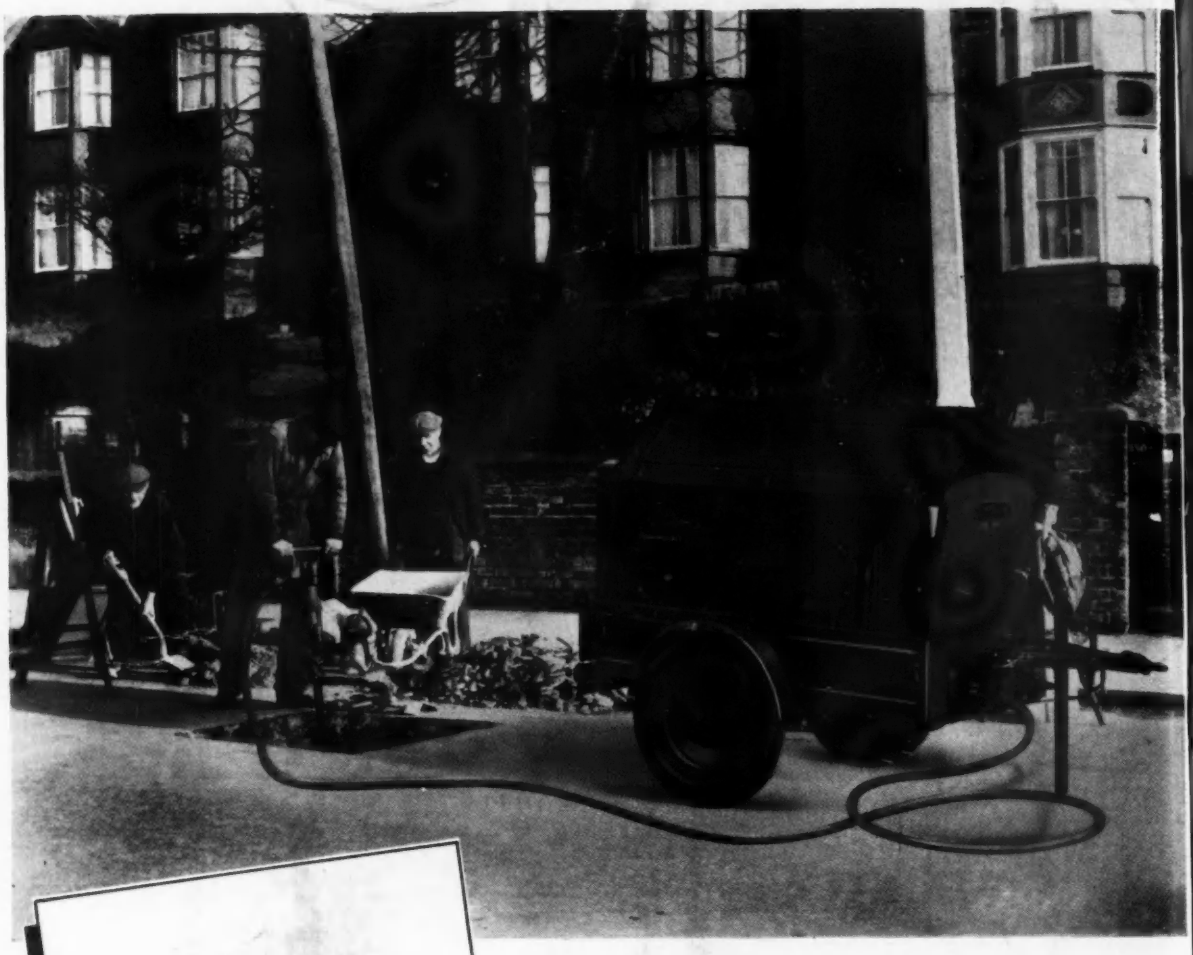

The handy "BROOMWADE" SV.78

Just the job for the small job

The "Broomwade" SV.78 delivers 60 cubic feet of free air at 100 lbs. pressure when operating at the normal running speed of 1500 r.p.m.

It is the most compact light-weight portable unit made.

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"BROOMWADE" pneumatic equipment is built to meet your requirements

"BROOMWADE" offers you:

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- Complete world-wide, after-sales service by works trained personnel
- Low initial cost — early delivery

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BROOM & WADE LTD., P.O. BOX NO. 7, HIGH WYCOMBE, ENGLAND

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